



ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY CLASS I PERMIT

COMPANY: *Phoenix Cement Company*
FACILITY: *Portland Cement Plant*
PERMIT #: *1001785*
DATE ISSUED: *Draft*
EXPIRY DATE:

SUMMARY

This Class I, Title V permit is issued to Phoenix Cement Company (PCC), the Permittee, for the operation of their Portland cement plant and quarry located at 3000 West Cement Plant Road in Clarkdale, Arizona.

This renewal permit is issued in accordance with Title 49, Chapter 3 of the Arizona Revised Statutes. All definitions, terms, and conditions used in this permit conform to those in the Arizona Administrative Code (A.A.C.) R18-2-101 et. seq., Arizona State Implementation Plan (SIP), Code of Federal Regulations (CFR) Title 40 - Parts 52, 60, 63, and 70 except as otherwise defined in this permit. All terms and conditions in this permit are enforceable by the Administrator of the U.S. Environmental Protection Agency.

The potential emission rates of the following pollutants are greater than major source thresholds: (i) particulate matter, (ii) particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}), (iii) nitrogen oxides, (iv) carbon monoxide, and (v) sulfur dioxide. Therefore, the facility is classified as a major source as defined in A.A.C. R18-2-101(64), and requires a Class I permit pursuant to A.A.C. R18-302(B)(1)(a).

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ATTACHMENT “A”: GENERAL PROVISIONS

Air Quality Control Permit No.1001785
for
Phoenix Cement Company

I. PERMIT EXPIRATION AND RENEWAL [ARS § 49-426.F, A.A.C. R18-2-304.C.2, and -306.A.1]

- A. This permit is valid for a period of five years from the date of issuance.
- B. The Permittee shall submit an application for renewal of this permit at least 6 months, but not more than 18 months, prior to the date of permit expiration.

II. COMPLIANCE WITH PERMIT CONDITIONS [A.A.C. R18-2-306.A.8.a and b]

- A. The Permittee shall comply with all conditions of this permit including all applicable requirements of the Arizona air quality statutes and air quality rules. Any permit noncompliance constitutes a violation of the Arizona Revised Statutes and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.
- B. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

III. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE [A.A.C. R18-2-306.A.8.c, -321.A.1, and -321.A.2]

- A. The permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- B. The permit shall be reopened and revised under any of the following circumstances:
 - 1. Additional applicable requirements under the Clean Air Act become applicable to the Class I source. Such a reopening shall only occur if there are three or more years remaining in the permit term. The reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless an application for renewal has been submitted pursuant to A.A.C. R18-2-322.B. Any permit revision required pursuant to this subparagraph shall comply with the provisions in A.A.C. R18-2-322 for permit renewal and shall reset the five year permit term.
 - 2. Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Upon approval by the

Administrator, excess emissions offset plans shall be deemed to be incorporated into the Class I permit.

3. The Director or the Administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
 4. The Director or the Administrator determines that the permit needs to be revised or revoked to assure compliance with the applicable requirements.
- C. Proceedings to reopen and reissue a permit, including appeal of any final action relating to a permit reopening, shall follow the same procedures as apply to initial permit issuance and shall, except for reopenings under Condition III.B.1 above, affect only those parts of the permit for which cause to reopen exists. Such reopenings shall be made as expeditiously as practicable. Permit reopenings for reasons other than those stated in Condition III.B.1 above shall not result in a resetting of the five year permit term.

IV. POSTING OF PERMIT

[A.A.C. R18-2-315]

- A. The Permittee shall post this permit or a certificate of permit issuance where the facility is located in such a manner as to be clearly visible and accessible. All equipment covered by this permit shall be clearly marked with one of the following:
1. Current permit number; or
 2. Serial number or other equipment ID number that is also listed in the permit to identify that piece of equipment.
- B. A copy of the complete permit shall be kept on site.

V. FEE PAYMENT

[A.A.C. R18-2-306.A.9 and -326]

The Permittee shall pay fees to the Director pursuant to ARS § 49-426(E) and A.A.C. R18-2-326.

VI. ANNUAL EMISSION INVENTORY QUESTIONNAIRE

[A.A.C. R18-2-327.A and B]

- A. The Permittee shall complete and submit to the Director an annual emissions inventory questionnaire. The questionnaire is due by March 31st or ninety days after the Director makes the inventory form available each year, whichever occurs later, and shall include emission information for the previous calendar year.
- B. The questionnaire shall be on a form provided by the Director and shall include the information required by A.A.C. R18-2-327.

VII. COMPLIANCE CERTIFICATION

[A.A.C. R18-2-309.2.a, -309.2.c-d, and -309.5.d]

- A.** The Permittee shall submit a compliance certification to the Director semiannually which describes the compliance status of the source with respect to each permit condition. The first certification shall be submitted no later than May 15th, and shall report the compliance status of the source during the period between October 1st of the previous year and March 31st of the current year. The second certification shall be submitted no later than November 15th, and shall report the compliance status of the source during the period between April 1st and September 30th of the current year.

The compliance certifications shall include the following:

1. Identification of each term or condition of the permit that is the basis of the certification;
2. Identification of the methods or other means used by the Permittee for determining the compliance status with each term and condition during the certification period, and whether the methods or other means provide continuous or intermittent data;
3. The status of compliance with the terms and conditions of this permit for the period covered by the certification, based on the methods or means designated in Condition VII.A.2 above. The certifications shall identify each deviation and take it into account for consideration in the compliance certification;
4. For emission units subject to 40 CFR Part 64, the certification shall also identify as possible exceptions to compliance any period during which compliance is required and in which an excursion or exceedance defined under 40 CFR Part 64 occurred;
5. All instances of deviations from permit requirements reported pursuant to Condition XII.B of this Attachment; and
6. Other facts the Director may require to determine the compliance status of the source.

- B.** A copy of all compliance certifications shall also be submitted to the EPA Administrator.

- C.** If any outstanding compliance schedule exists, a progress report shall be submitted with the semi-annual compliance certifications required in Condition VII.A above.

VIII. CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS

[A.A.C. R18-2-304.H]

Any document required to be submitted by this permit, including reports, shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

IX. INSPECTION AND ENTRY

[A.A.C. R18-2-309.4]

Upon presentation of proper credentials, the Permittee shall allow the Director or the authorized representative of the Director to:

- A. Enter upon the Permittee's premises where a source is located, emissions-related activity is conducted, or where records are required to be kept under the conditions of the permit;
- B. Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
- C. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
- D. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or other applicable requirements; and
- E. Record any inspection by use of written, electronic, magnetic and photographic media.

X. PERMIT REVISION PURSUANT TO FEDERAL HAZARDOUS AIR POLLUTANT STANDARD

[A.A.C. R18-2-304.C]

If this source becomes subject to a standard promulgated by the Administrator pursuant to Section 112(d) of the Act, then the Permittee shall, within twelve months of the date on which the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard.

XI. ACCIDENTAL RELEASE PROGRAM

[40 CFR Part 68]

If this source becomes subject to the provisions of 40 CFR Part 68, then the Permittee shall comply with these provisions according to the time line specified in 40 CFR Part 68.

XII. EXCESS EMISSIONS, PERMIT DEVIATIONS, AND EMERGENCY REPORTING

A. Excess Emissions Reporting

[A.A.C. R18-2-310.01.A and -310.01.B]

1. Excess emissions shall be reported as follows:

- a. The Permittee shall report to the Director any emissions in excess of the limits established by this permit. Such report shall be in two parts as specified below:
 - (1) Notification by telephone or facsimile within 24 hours of the time when the Permittee first learned of the occurrence of excess emissions including all available information from Condition XII.A.1.b below.

- (2) Detailed written notification by submission of an excess emissions report within 72 hours of the notification pursuant to Condition XII.A.1.a.(1) above.

b. The report shall contain the following information:

- (1) Identity of each stack or other emission point where the excess emissions occurred;
- (2) Magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;
- (3) Date, time and duration, or expected duration, of the excess emissions;
- (4) Identity of the equipment from which the excess emissions emanated;
- (5) Nature and cause of such emissions;
- (6) If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions; and
- (7) Steps taken to limit the excess emissions. If the excess emissions resulted from start-up or malfunction, the report shall contain a list of the steps taken to comply with the permit procedures.

2. In the case of continuous or recurring excess emissions, the notification requirements of this section shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in such notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period, or changes in the nature of the emissions as originally reported, shall require additional notification pursuant to Condition XII.A.1 above. [A.A.C. R18-2-310.01.C]

B. Permit Deviations Reporting

[A.A.C. R18-2-306.A.5.b]

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Prompt reporting shall mean that the report was submitted to the Director by certified mail, facsimile, or hand delivery within two working days of the time the deviation occurred.

C. Emergency Provision

[A.A.C. R18-2-306.E]

1. An “emergency” means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.
2. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if Condition XII.C.3 is met.
3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. An emergency occurred and that the Permittee can identify the cause(s) of the emergency;
 - b. The permitted facility was being properly operated at the time;
 - c. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
 - d. The Permittee submitted notice of the emergency to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.
4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

D. Compliance Schedule

[ARS § 49-426.I.5]

For any excess emission or permit deviation that cannot be corrected within 72 hours, the Permittee is required to submit a compliance schedule to the Director within 21 days of such occurrence. The compliance schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with the permit terms or conditions that have been violated.

E. Affirmative Defenses for Excess Emissions Due to Malfunctions, Startup, and Shutdown [A.A.C. R18-2-310]

1. Applicability

This rule establishes affirmative defenses for certain emissions in excess of an emission standard or limitation and applies to all emission standards or limitations except for standards or limitations:

- a. Promulgated pursuant to Sections 111 or 112 of the Act;
- b. Promulgated pursuant to Titles IV or VI of the Clean Air Act;
- c. Contained in any Prevention of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the U.S. EPA;
- d. Contained in A.A.C. R18-2-715.F; or
- e. Included in a permit to meet the requirements of A.A.C. R18-2-406.A.5.

2. Affirmative Defense for Malfunctions

Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. When emissions in excess of an applicable emission limitation are due to a malfunction, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:

- a. The excess emissions resulted from a sudden and unavoidable breakdown of process equipment or air pollution control equipment beyond the reasonable control of the Permittee;
- b. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
- c. If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, the Permittee satisfactorily demonstrated that the measures were impracticable;
- d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;

- e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
- f. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;
- g. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;
- h. The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;
- i. All emissions monitoring systems were kept in operation if at all practicable; and
- j. The Permittee's actions in response to the excess emissions were documented by contemporaneous records.

3. *Affirmative Defense for Startup and Shutdown*

- a. Except as provided in Condition XII.E.3.b below, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. When emissions in excess of an applicable emission limitation are due to startup and shutdown, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of A.A.C. R18-2-310.01 and has demonstrated all of the following:
 - (1) The excess emissions could not have been prevented through careful and prudent planning and design;
 - (2) If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life, personal injury, or severe damage to air pollution control equipment, production equipment, or other property;
 - (3) The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
 - (4) The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;

- (5) All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
 - (6) During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;
 - (7) All emissions monitoring systems were kept in operation if at all practicable; and
 - (8) The Permittee's actions in response to the excess emissions were documented by contemporaneous records.
- b. If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to Condition XII.E.2 above.

4. *Affirmative Defense for Malfunctions During Scheduled Maintenance*

If excess emissions occur due to a malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to Condition XII.E.2 above.

5. *Demonstration of Reasonable and Practicable Measures*

For an affirmative defense under Condition XII.E.2 or XII.E.3 above, the Permittee shall demonstrate, through submission of the data and information required by Condition XII.E and A.A.C. R18-2-310.01, that all reasonable and practicable measures within the Permittee's control were implemented to prevent the occurrence of the excess emissions.

XIII. RECORD KEEPING REQUIREMENTS

[A.A.C. R18-2-306.A.4]

- A. The Permittee shall keep records of all required monitoring information including, but not limited to, the following:
1. The date, place as defined in the permit, and time of sampling or measurements;
 2. The date(s) analyses were performed;
 3. The name of the company or entity that performed the analyses;
 4. A description of the analytical techniques or methods used;
 5. The results of such analyses; and

6. The operating conditions as existing at the time of sampling or measurement.
- B.** The Permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings or other data recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.
- C.** All required records shall be maintained either in an unchangeable electronic format or in a handwritten logbook utilizing indelible ink.

XIV. REPORTING REQUIREMENTS

[A.A.C. R18-2-306.A.5.a]

The Permittee shall submit the following reports:

- A.** Compliance certifications in accordance with Section VII of Attachment “A”.
- B.** Excess emission, permit deviation, and emergency reports in accordance with Section XII of Attachment “A”.
- C.** Other reports required by any condition of Attachment “B”.

XV. DUTY TO PROVIDE INFORMATION

[A.A.C. R18-2-304.G and -306.A.8.e]

- A.** The Permittee shall furnish to the Director, within a reasonable time, any information that the Director may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit, or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Director copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish an additional copy of such records directly to the Administrator along with a claim of confidentiality.
- B.** If the Permittee has failed to submit any relevant facts or has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

XVI. PERMIT AMENDMENT OR REVISION

[A.A.C. R18-2-318, -319, and -320]

The Permittee shall apply for a permit amendment or revision for changes to the facility which do not qualify for a facility change without revision under Section XVII, as follows:

- A.** Administrative Permit Amendment (A.A.C. R18-2-318);
- B.** Minor Permit Revision (A.A.C. R18-2-319); and
- C.** Significant Permit Revision (A.A.C. R18-2-320).

The applicability and requirements for such action are defined in the above referenced regulations.

XVII. FACILITY CHANGE WITHOUT A PERMIT REVISION

[A.A.C. R18-2-306.A.4 and -317]

- A.** The Permittee may make changes at the permitted source without a permit revision if all of the following apply:
1. The changes are not modifications under any provision of Title I of the Act or under ARS § 49-401.01(19);
 2. The changes do not exceed the emissions allowable under the permit whether expressed therein as a rate of emissions or in terms of total emissions;
 3. The changes do not violate any applicable requirements or trigger any additional applicable requirements;
 4. The changes satisfy all requirements for a minor permit revision under A.A.C. R18-2-319.A; and
 5. The changes do not contravene federally enforceable permit terms and conditions that are monitoring (including test methods), record keeping, reporting, or compliance certification requirements.
- B.** The substitution of an item of process or pollution control equipment for an identical or substantially similar item of process or pollution control equipment shall qualify as a change that does not require a permit revision, if it meets all of the requirements of Conditions XVII.A and XVII.C of this Attachment.
- C.** For each change under Conditions XVII.A and XVII.B above, a written notice by certified mail or hand delivery shall be received by the Director and the Administrator a minimum of 7 working days in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided less than 7 working days in advance of the change, but must be provided as far in advance of the change as possible or, if advance notification is not practicable, as soon after the change as possible. Each notification shall include:
1. When the proposed change will occur;
 2. A description of the change;
 3. Any change in emissions of regulated air pollutants; and
 4. Any permit term or condition that is no longer applicable as a result of the change.
- E.** The permit shield described in A.A.C. R18-2-325 shall not apply to any change made to Conditions XVII.A and XVII.B above.
- F.** Except as otherwise provided for in the permit, making a change from one alternative operating scenario to another as provided under A.A.C. R18-2-306.A.11 shall not require

any prior notice under this Section.

- G.** Notwithstanding any other part of this Section, the Director may require a permit to be revised for any change that, when considered together with any other changes submitted by the same source under this Section over the term of the permit, do not satisfy Condition XVII.A above.

XVIII. TESTING REQUIREMENTS

[A.A.C. R18-2-312]

- A.** The Permittee shall conduct performance tests as specified in the permit and at such other times as may be required by the Director.

B. Operational Conditions During Testing

Tests shall be conducted during operation at the maximum possible capacity of each unit under representative operational conditions unless other conditions are required by the applicable test method or in this permit. With prior written approval from the Director, testing may be performed at a lower rate. Operations during periods of start-up, shutdown, and malfunction (as defined in A.A.C. R18-2-101) shall not constitute representative operational conditions unless otherwise specified in the applicable standard.

- C.** Tests shall be conducted and data reduced in accordance with the test methods and procedures contained in the Arizona Testing Manual unless modified by the Director pursuant to A.A.C. R18-2-312.B.

D. Test Plan

At least 14 calendar days prior to performing a test, the Permittee shall submit a test plan to the Director in accordance with A.A.C. R18-2-312.B and the Arizona Testing Manual. This test plan must include the following:

1. Test duration;
2. Test location(s);
3. Test method(s); and
4. Source operation and other parameters that may affect test results.

E. Stack Sampling Facilities

The Permittee shall provide, or cause to be provided, performance testing facilities as follows:

1. Sampling ports adequate for test methods applicable to the facility;
2. Safe sampling platform(s);
3. Safe access to sampling platform(s); and
4. Utilities for sampling and testing equipment.

F. Interpretation of Final Results

Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs is required to be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control, compliance may, upon the Director's approval, be determined using the arithmetic mean of the results of the other two runs. If the Director or the Director's designee is present, tests may only be stopped with the Director's or such designee's approval. If the Director or the Director's designee is not present, tests may only be stopped for good cause. Good cause includes: forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of any test without good cause after the first run is commenced shall constitute a failure of the test. Supporting documentation which demonstrates good cause must be submitted.

G. Report of Final Test Results

A written report of the results of all performance tests shall be submitted to the Director within 30 days after the test is performed. The report shall be submitted in accordance with the Arizona Testing Manual and A.A.C. R18-2-312.A.

XIX. PROPERTY RIGHTS

[A.A.C. R18-2-306.A.8.d]

This permit does not convey any property rights of any sort, or any exclusive privilege.

XX. SEVERABILITY CLAUSE

[A.A.C. R18-2-306.A.7]

The provisions of this permit are severable. In the event of a challenge to any portion of this permit, or if any portion of this permit is held invalid, the remaining permit conditions remain valid and in force.

XXI. PERMIT SHIELD

[A.A.C. R18-2-325]

Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements identified in the portions of this permit subtitled "Permit Shield". The permit shield shall not apply to minor revisions pursuant to Condition XVI.B of this Attachment and any facility changes

without a permit revision pursuant to Section XVII of this Attachment.

XXII. PROTECTION OF STRATOSPHERIC OZONE

[40 CFR Part 82]

If this source becomes subject to the provisions of 40 CFR Part 82, then the Permittee shall comply with these provisions accordingly.

ATTACHMENT “B”: SPECIFIC CONDITIONS

Air Quality Control Permit No. 1001785
for
Phoenix Cement Company

I. FACILITY WIDE LIMITATIONS

A. Operating Requirements

[A.A.C. R18-2-306.01 and -331.A.3.a]

Material Permit Conditions are indicated with underline and italics.

1. *The Permittee shall not operate Kiln 4 and Clinker Cooler 4 when any of the existing systems, which include Kilns 1, 2, and 3 and Clinker Coolers 1, 2, and 3, are in operation.*
2. *The Permittee shall permanently shut down Kilns 1, 2, and 3 and Clinker Coolers 1, 2, and 3 no later than 180 days after the commencement of operation of Kiln 4 and Clinker Cooler 4.*
3. *The Permittee shall not cause to be discharged into the atmosphere from Kiln 4 carbon monoxide (CO) emissions in excess of 767 tons per year on a 12-month rolling average.*
4. *The Permittee shall not cause to be discharged into the atmosphere from Kiln 4 and the Coal Mill sulfur dioxide (SO₂) emissions in excess of 0.5 lb per ton of clinker produced in any calendar month.*
5. The Permittee shall not operate the standby raw mill (BM-301) when the in-line raw mill (RM-306) is in operation.
6. The Permittee shall not operate the swing mill (BM-302) for the purposes of raw grinding, rather than finish grinding, when the in-line raw mill (RM-306) is in operation.
7. The Permittee shall operate and maintain all equipment at the facility in accordance with the manufacturer’s specifications.
8. *Fuel Limitations*

- a. The Permittee shall only burn the following fuels at the facility:

<i>Fuel Type</i>	<i>Maximum Fuel Proportion (% Heat Input)</i>
Coal	100
Pet-Coke	60
#2 Fuel Oil	100

Natural Gas	100
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- b. Maximum fuel proportion is defined as the maximum percent of actual heat input provided by a fuel component in a fuel mixture.
- c. The Permittee shall operate the facility such that the amount of pet-coke in the fuel mixture (percent heat input) does not exceed the amount used in the most recent performance test.

B. Air Pollution Control Requirements

[A.A.C. R18-2-306.01]

At all times, including periods of start-up, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate all dust collectors listed in Attachment "D" in a manner consistent with good air pollution control practice for minimizing particulate matter emissions.

C. Monitoring Requirements

[A.A.C. R18-2-306.A.3]

Within 30 days of permit issuance, the Permittee shall have on site or on call a person that is certified in EPA Reference Method 9.

D. Testing Requirement

[A.A.C. R18-2-312 and Significant Permit Revision #1001001]

- 1. The Permittee shall follow the procedures of Section XVIII of Attachment "A" for all performance tests.
- 2. All performance tests shall be conducted while firing the worst fuel scenario as identified in the fuel optimization study and at the maximum operating capacity of the unit being tested. Upon receipt of prior written approval from the Department, the Permittee may conduct performance tests at less than the maximum operating capacity of the units being tested and/or other fuel combinations.
- 3. The Permittee shall use the following test methods when conducting performance tests at the facility:
 - a. Particulate Matter - EPA Reference Method 5;
 - b. Opacity - EPA Reference Method 9;
 - c. Nitrogen Oxides - EPA Reference Method 7E;
 - d. Carbon Monoxide - EPA Reference Method 10;
 - e. Sulfur Dioxide - EPA Reference Method 6C;
 - f. Volatile Organic Compounds - EPA Reference Method 25A; and
 - g. Dioxins/Furans and Temperature - EPA Reference Method 23.

E. Record Keeping Requirements

[A.A.C. R18-2-306.A.4]

1. The Permittee shall maintain records of the amount of clinker produced hourly on a 24-hour rolling average when operating Kiln 4.
2. The Permittee shall maintain monthly records of the carbon monoxide (CO) emissions in tons from Kiln 4 as measured by the CEMS.
3. The Permittee shall maintain records of the amount of clinker produced daily on a 30-day rolling average when operating Kilns 1, 2, and 3.
4. The Permittee shall maintain daily records of the type and amount of each fuel component utilized in Kilns 1, 2, 3, and 4. When using pet-coke, the Permittee shall calculate the total heat input of all fuels in use.
5. The Permittee shall maintain records of the operating hours for the standby raw mill, in-line raw mill, and swing mill including the start-up and shut down time in hours and minutes and whether the swing mill is operating for the purposes of raw grinding or finish grinding.
6. The Permittee shall maintain records of the manufacturer's specifications for all equipment on-site.
7. All records, analyses, and reports shall be retained for a minimum of five years from the date of generation. The most recent two years of data shall be kept on-site.

F. Reporting Requirement

[A.A.C. R18-2-306.A.5]

1. The Permittee shall notify the Director within 30 days of the date on which Kilns 1, 2, and 3 and Clinker Coolers 1, 2, and 3 are permanently shut down.
2. Within 180 days of permit issuance, the Permittee shall submit a fuel optimization analysis to the Department which includes a determination of the worst case fuel scenario.
3. The Permittee shall submit reports of all monitoring activities required by this permit, along with the compliance certifications required by Section VII of Attachment "A."

II. PORTLAND CEMENT OPERATIONS WHEN OPERATING KILN 4

A. Emission Limits/Standards

1. *Standards for the In-Line Kiln/Raw Mill*
 - a. *The Permittee shall not cause to be discharged into the atmosphere from the in-line kiln/raw mill carbon monoxide (CO) emissions in excess of 2 lb/ton of clinker produced on an 8-hour rolling average. Emissions shall be calculated hourly based on the continuous emissions*

monitoring system (CEMS) and the amount of clinker produced.

[A.A.C. R18-2-306.01 and -331.A.3.a]

Material Permit Conditions are indicated with underline and italics.

b. *The Permittee shall not cause to be discharged into the atmosphere from the in-line kiln/raw mill any gases which:*

[40 CFR 63.1343(b) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

(1) *Contain particulate matter (PM) in excess of 0.15 kg per Mg (0.30 lb per ton) of feed (dry basis) to the kiln.*

(2) *Exhibit opacity greater than 20 percent.*

(3) *Contain dioxins/furans (D/F) in excess of:*

(a) *0.20 ng per dscm (8.7×10^{-11} gr per dscf) (toxicity equivalents (TEQ)) corrected to seven percent oxygen;*
or

(b) *0.40 ng per dscm (1.7×10^{-10} gr per dscf) (TEQ) corrected to seven percent oxygen, when the average of the performance test run average temperatures at the inlet to the particulate matter control device is 204°C (400°F) or less.*

c. *The Permittee shall operate the in-line kiln/raw mill, such that:*

[40 CFR 63.1344(a)(1), 63.1344 (a)(2), and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

(1) *When the raw mill of the in-line kiln/raw mill is operating, the applicable temperature limit for the main in-line kiln/raw mill exhaust, specified in Condition II.A.1.d below and established during the performance test when the raw mill was operating, is not exceeded.*

(2) *When the raw mill of the in-line kiln/raw mill is not operating, the applicable temperature limit for the main in-line kiln/raw mill exhaust, specified in Condition II.A.1.d below and established during the performance test when the raw mill was not operating, is not exceeded.*

d. *The temperature limit for the affected sources, as defined in 40 CFR 63.1340(b), meeting the limits of Condition II.A.1.c above, is determined in accordance with Condition II.F.2.b(4) below.*

[40 CFR 63.1344(b) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

2. *Standards for Clinker Coolers* [40 CFR 63.1345(a) and A.A.C. R18-2-331.A.3.b]
Material Permit Conditions are indicated with underline and italics.

The Permittee shall not cause to be discharged into the atmosphere from the clinker cooler any gases which:

- a. *Contain particulate matter in excess of 0.050 kg per Mg (0.10 lb per ton) of feed (dry basis) to the kiln.*
- b. *Exhibit opacity greater than 10 percent.*

3. *Standards for Raw Material Dryers* [40 CFR 63.1346(a) and A.A.C. R18-2-331.A.3.b]
Material Permit Conditions are indicated with underline and italics.

The Permittee shall not cause to be discharged into the atmosphere from the raw material dryer any gases which exhibit opacity greater than 10 percent.

4. *Standards for Raw and Finish Mills* [40 CFR 63.1347 and A.A.C. R18-2-331.A.3.b]
Material Permit Conditions are indicated with underline and italics.

The Permittee shall not cause to be discharged from the mill sweep or air separator air pollution control devices any gases which exhibit opacity in excess of 10 percent.

5. *Standards for Material Handling Points*[40 CFR 63.1348 and A.A.C. R18-2-331.A.3.b]
Material Permit Conditions are indicated with underline and italics.

The Permittee shall not cause to be discharged from any raw material, clinker, or finished product storage bin, conveying system transfer point, bagging system, and bulk loading or unloading system any gases which exhibit opacity in excess of 10 percent.

B. Air Pollution Control Requirements [A.A.C. R18-2-306.01 and -331.A.3.a]
Material Permit Conditions are indicated with underline and italics.

1. *The Permittee shall maintain and operate Kiln 4 in accordance with the manufacturer's specified operating procedures to ensure good combustion practice.*
2. *The Permittee shall install and maintain clinker domes to minimize visible emissions to the extent practicable.*

C. Monitoring Requirements

1. The Permittee shall comply with the operation and maintenance plan approved by the Department. Failure to comply with any provision of the operations and maintenance plan shall be a violation of the standard.

[40 CFR 63.1350(b) and A.A.C. R18-2-306.A.3]

2. The Permittee shall monitor the opacity at each point where emissions are vented from the in-line kiln/raw mill in accordance with the following conditions:

[40 CFR 63.1350(c)]

- a. The Permittee shall install, calibrate, maintain and operate a continuous opacity monitor (COM) located at the outlet of the PM control device to continuously monitor the opacity. The COM shall be installed, maintained, calibrated, and operated as required by Subpart A of 40 CFR 63 and according to PS-1 of Appendix B of 40 CFR 60.

[40 CFR 63.1350(c)(1) and A.A.C. R18-2-331.A.3.c]

Material Permit Conditions are indicated with underline and italics.

- b. To remain in compliance, the opacity shall be maintained such that the 6-minute average opacity for any 6-minute block period does not exceed 20 percent. If the average opacity for any 6-minute block period exceeds 20 percent, this shall constitute a violation of the standard.

[40 CFR 63.1350(c)(3) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

3. The Permittee shall monitor opacity from the clinker cooler at each point where emissions are vented from the clinker cooler in accordance with the following conditions:

[40 CFR 63.1350(d)]

- a. The Permittee shall install, calibrate, maintain, and operate a COM located at the outlet of the clinker cooler PM control device to continuously monitor the opacity. The COM shall be installed, maintained, calibrated, and operated as required by Subpart A of 40 CFR 63 and according to PS-1 of Appendix B of 40 CFR 60.

[40 CFR 63.1350(d)(1) and A.A.C. R18-2-331.A.3.c]

Material Permit Conditions are indicated with underline and italics.

- b. To remain in compliance, the opacity shall be maintained such that the 6-minute average opacity for any 6-minute block period does not exceed 10 percent. If the average opacity for any 6-minute block period exceeds 10 percent, this shall constitute a violation of the standard.

[40 CFR 63.1350(d)(3) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

4. The Permittee shall monitor opacity from the finish mill by conducting daily visual emissions observations of the mill sweep and air separator particulate matter control devices (PMCDs) of the affected sources, as defined in 40 CFR 63.1340(b), in accordance with the procedures of EPA Reference Method 22. The EPA Reference Method 22 test shall be conducted while the affected source is operating at the highest load or capacity level reasonably expected to occur within the day. The duration of the EPA Reference Method 22 test shall be 6 minutes. If visible emissions are observed during any EPA Reference Method 22 visible emissions test, the Permittee must:

[40 CFR 63.1350(e) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

- a. Initiate, within one-hour, the corrective actions specified in the site specific operating and maintenance plan; and
 - b. Within 24 hours of the end of the EPA Reference Method 22 test in which visible emissions were observed, conduct a visual opacity test of each stack from which visible emissions were observed in accordance with EPA Reference Method 9. The duration of the EPA Reference Method 9 test shall be 30 minutes.
5. The Permittee shall monitor D/F emissions in accordance with the following conditions: [40 CFR 63.1350(f) and A.A.C. R18-2-331.A.3.c]
Material Permit Conditions are indicated with underline and italics.]
- a. The Permittee shall install, calibrate, maintain, and operate a continuous monitor to record the temperature of the exhaust gases from the in-line kiln/raw mill at the inlet to, or upstream of, the in-line kiln/raw mill particulate matter control device (PMCD).
 - (1) The recorder response range must include zero and 1.5 times either of the average temperatures established according to the requirements in Condition II.F.2.b(4) below.
 - (2) The reference method must be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the Administrator.
 - b. The Permittee shall monitor and continuously record the temperature of the exhaust gases from the in-line kiln/raw mill at the inlet to the in-line kiln/raw mill PMCD.
 - c. The three-hour rolling average temperature shall be calculated as the average of 180 successive one-minute average temperatures.
 - d. Periods of time when one-minute averages are not available shall be ignored when calculating three-hour rolling averages. When one-minute averages become available, the first one-minute average is added to the previous 179 values to calculate the three-hour rolling average.
 - e. When the operating status of the raw mill of the in-line kiln/raw mill is changed from off to on, or from on to off, the calculation of the three-hour rolling average temperature must begin anew, without considering previous recordings.
 - f. The calibration of all thermocouples and other temperature sensors shall be verified at least once every three months.
6. The Permittee shall conduct an inspection of the components of the combustion system of each in-line kiln/raw mill at least once per year.

7. The Permittee shall monitor opacity in accordance with the operation and maintenance plan. [40 CFR 63.1350(j)]

8. Start-Up, Shutdown, and Malfunction Plan

- a. The Permittee shall develop and implement a written start-up, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the Portland cement operations during periods of start-up, shutdown, and malfunction, and a program of corrective action for malfunctioning equipment used to comply with the relevant standard. As required under 40 CFR 63.8(c)(1)(i), the plan shall identify all routine or otherwise predictable continuous monitoring system (CMS) malfunctions.

[40 CFR 63.6(e)(3)(i)]

- b. During periods of start-up, shutdown, and malfunction, the Permittee shall operate and maintain the Portland cement operations (including associated air pollution control equipment) in accordance with the procedures specified in the start-up, shutdown, and malfunction plan.

[40 CFR 63.6(e)(3)(ii)]

- c. To satisfy the requirements to develop a start-up, shutdown, and malfunction plan, the Permittee may use the Portland cement operations standard operating procedures (SOP) manual, an Occupational Safety and Health Administration (OSHA), or other plan, provided the alternative plans meet all the requirements of 40 CFR 63.6(e)(3) and are made available for inspection when requested by the Director.

[40 CFR 63.6(e)(3)(vi)]

- d. The Director may require the Permittee to make reasonable revisions to the start-up, shutdown, and malfunction plan, if the Director finds that the plan:

[40 CFR 63.6(e)(3)(vii)]

- (1) Does not address a start-up, shutdown, or malfunction event that has occurred;
- (2) Fails to provide for the operation of the Portland cement operations (including associated air pollution control equipment) during a start-up, shutdown, or malfunction event in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards; or
- (3) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control equipment as quickly as practicable.

- e. If the start-up, shutdown, and malfunction plan fails to address or

inadequately addresses an event that meets the characteristics of a malfunction, but was not included in the start-up, shutdown, and malfunction plan at the time the Permittee developed the plan, the Permittee shall revise the start-up, shutdown, and malfunction plan and submit it to the Department for approval within 45 days after the event to include detailed procedures for operating and maintaining the Portland cement operations during similar malfunction events, and a program of corrective action for similar malfunctions of process or air pollution control equipment.

[40 CFR 63.6(e)(3)(viii)]

9. *The Permittee shall install, maintain, and operate a COMS to measure the stack exhaust opacity of the Coal Mill Stack.* [A.A.C. R18-2-306.01 and -331.A.3.c]
Material Permit Conditions are indicated with underline and italics.
10. *The Permittee shall install, maintain, and operate a CEMS on the Kiln 4/In-Line Raw Mill Stack to measure carbon monoxide (CO) emissions.*
[A.A.C. R18-2-306.01 and -331.A.3.c]
Material Permit Conditions are indicated with underline and italics.
11. *The Permittee shall install, maintain, and operate a continuous flow rate monitor on the Coal Mill Stack to measure the Kiln 4 exhaust gas flow rate by-passed through the Coal Mill.* [A.A.C. R18-2-306.01 and -331.A.3.c]
Material Permit Conditions are indicated with underline and italics.
12. Unless otherwise specified, all continuous emissions, opacity, and temperature monitoring systems shall meet the following requirements within 60 days of commencement of operation. [A.A.C. R18-2-306.A.3.c]
 - a. Monitoring performance specifications of Condition II.C above, 40 CFR 63.8(a)(1), and 40 CFR 63.8(b) through 40 CFR 63.8(g);
 - b. Data recovery (availability) shall be 90 percent or greater during each calendar month; and
 - c. Instrument span shall be such that the expected output is 50 to 70 percent (1.5 times the average temperature established according to Condition II.F.2.b(4) below for temperature monitors) of span.
13. The Permittee shall submit a Quality Assurance/Quality Control (QA/QC) plan to the Director 30 days prior to instrument start-up. The QA/QC plan shall include quarterly relative accuracy test audit (RATA) where a cylinder gas audit (CGA) may be conducted in lieu of RATA for three or four calendar quarters, but no more than three quarters in succession. All RATAs and CGAs shall meet the requirements of 40 CFR 63.8(a)(1) and 40 CFR 63.8(b) through 40 CFR 63.8(g). Upon the Department's approval, the plan shall be implemented. The Permittee shall notify the Director 14 days prior to performing RATA or CGA.
[A.A.C. R18-2-306.A.3.c]
14. The Permittee shall maintain a file of all of the following measurements including

performance testing, continuous monitoring system performance evaluations, all continuous monitoring system or monitoring device calibration checks, and adjustments and maintenance performed on these systems or devices. This data shall be recorded in a permanent form suitable for inspection.

[A.A.C. R18-2-306.A.4]

15. The Permittee shall calculate and record the 30-day rolling average hourly carbon monoxide (CO) from Kiln 4 and the Coal Mill based on Kiln 4 CEMS data and flow rate measurements required by Condition II.C.11 above. The Permittee shall also record the hourly raw material feed rate to Kiln 4.

[A.A.C. R18-2-306.A.4]

16. *Continuous Monitoring System Requirements*

[40 CFR 63.8(c)]

- a. The Permittee shall maintain and operate each continuous monitoring system (CMS) as specified in Condition II.C.16 and in a manner consistent with good air pollution control practices.

(1) The Permittee shall ensure the immediate repair or replacement of CMS parts to correct “routine” or otherwise predictable CMS malfunctions as defined in the start-up, shutdown, and malfunction plan required under Condition II.C.8 above. The Permittee shall keep the necessary parts for routine repairs of the affected equipment readily available. If the plan is followed and the CMS is repaired immediately, this action shall be reported in the semi-annual start-up, shutdown, and malfunction report required under 40 CFR 63.10(d)(5)(i).

(2) For those malfunctions or other events that affect the CMS and are not addressed by the start-up, shutdown, and malfunction plan, the Permittee shall report actions that are not consistent with the start-up, shutdown, and malfunction plan within 24 hours after commencing actions inconsistent with the plan. The Permittee shall send a follow-up report within 2 weeks after commencing actions inconsistent with the plan that either certifies that corrections have been made or includes a corrective action plan and schedule. The Permittee shall provide proof that repair parts have been ordered or any other records that would indicate that the delay in making repairs is beyond his or her control.

(3) The Director’s determination of whether acceptable operation and maintenance procedures are being used will be based on information that may include, but is not limited to, review of operation and maintenance procedures, operation and maintenance records, manufacturing recommendations and specifications, and inspection of the CMS. Operation and maintenance procedures written by the CMS manufacturer and other guidance also can be used to maintain and operate each CMS.

- b. All CMS shall be installed such that representative measurements of

emissions or process parameters from the affected source are obtained. In addition, CEMS shall be located according to procedures contained in the applicable performance specification(s).

- c. All CMS shall be installed, operational, and the data verified as specified in the relevant standard either prior to or in conjunction with conducting performance tests under 40 CFR 63.7. Verification of operational status shall, at a minimum, include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.
- d. Except for system breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level calibration drift adjustments, all CMS, including COMS and CEMS, shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:
 - (1) All COMS shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.
 - (2) All CEMS for measuring emissions other than opacity shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.
- e. Unless otherwise approved by the Director, minimum procedures for COMS shall include a method for producing a simulated zero opacity condition and an upscale (high-level) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of all the analyzer's internal optical surfaces and all electric circuitry, including the lamp and photodetector assembly normally used in the measurement of opacity.
- f. The Permittee of a CMS installed in accordance with the provisions of 40 CFR 63 and the applicable CMS performance specification(s) shall check the zero (low-level) and high-level calibration drifts at least once daily in accordance with the written procedure specified in the performance evaluation plan developed under 40 CFR 63.8(e)(3)(i) and 40 CFR 63.8(e)(3)(iii). The zero (low-level) and high-level calibration drifts shall be adjusted, at a minimum, whenever the 24-hour zero (low-level) drift exceeds two times the limits of the applicable performance specification(s) specified in the relevant standard. The system must allow the amount of excess zero (low-level) and high-level drift measured at the 24-hour interval checks to be recorded and quantified, whenever specified. For COMS, all optical and instrumental surfaces exposed to the effluent gases shall be cleaned prior to performing the zero (low-level) and high-level drift adjustments; the optical surfaces and instrumental surfaces shall be cleaned when the cumulative automatic zero compensation, if applicable, exceeds 4 percent

opacity.

- g. A CMS is out of control if:
 - (1) The zero (low-level), mid-level (if applicable), or high-level calibration drift (CD) exceeds two times the applicable CD specification in the applicable performance specification or in the relevant standard; or
 - (2) The CMS fails a performance test audit (e.g., cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit; or
 - (3) The COMS CD exceeds two times the limit in the applicable performance specification in the relevant standard.
- h. When the CMS is out of control, the Permittee shall take the necessary corrective action and shall repeat all necessary tests which indicate that the system is out of control. The Permittee shall take corrective action and conduct retesting until the performance requirements are below the applicable limits. The beginning of the out-of-control period is the hour the Permittee conducts a performance check (e.g., calibration drift) that indicates an exceedance of the performance requirements established under 40 CFR 63. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system is within the allowable limits. During the period the CMS is out of control, recorded data shall not be used in data averages and calibrations, or to meet any data availability requirement established under 40 CFR 63.
- i. The Permittee of a CMS that is out of control as defined in Conditions II.C.16.g and II.C.16.h above shall submit all information concerning out-of-control periods, including start and end dates, hours, and descriptions of corrective actions taken, in the excess emissions and continuous monitoring system performance report required under 40 CFR 63.10(e)(3).

17. Until such time that a PM CEMS is installed, the Permittee shall monitor particulate matter emissions from Kiln 4 in the following manner: [A.A.C. R18-2-306.A.3.c]

- a. The Permittee shall evaluate opacity measurements from the COM system on a 3-hour rolling average. If the 3-hour rolling average opacity exceeds 10 percent, the Permittee shall initiate investigation of the control equipment within 24 hours of the occurrence, to identify any need for corrective action. If corrective action is required, the Permittee shall implement such corrective action as soon as practicable in order to avert or minimize possible exceedances of the particulate matter standard in Condition II.A.1.b(1) above. If the 3-hour rolling average opacity remains above 10 percent for 72 consecutive hours after the first occurrence, the Permittee shall submit a compliance schedule to ADEQ in accordance with Condition XII.D of Attachment "A."

D. Continuous Assurance Monitoring (CAM) Requirements

[40 CFR 64.3]

1. Monitoring Procedures for Utility Dust Collectors

a. Applicability

The monitoring requirements in Condition II.D.1 are applicable to the following dust collectors: DC-200, DC-202, DC-215, DC-216, DC-304, DC-450, DC-451, DC-452, and DC-460.

b. Visible Emissions

(1) Measurement Approach

The Permittee shall conduct daily visible emissions observations and determine opacity if any visible emissions are observed.

(2) Indicator Range

An excursion is defined as any time in which visible emissions are observed. Excursions trigger an inspection, corrective action, and reporting requirements.

(3) Performance Criteria

(a) Observations shall be performed at the dust collector exhaust while the emission sources are operating.

(b) Visual Emissions Observations

(i) The Permittee shall perform EPA Reference Method 22-like procedures for one minute daily. If there are no visible emissions observed for seven consecutive days, then the observations shall be performed weekly. If visible emissions are observed during a weekly observation, then the frequency reverts back to daily until no visible emissions are observed for seven consecutive days.

(ii) If visible emissions are observed, the Permittee shall immediately conduct an EPA Reference Method 9 opacity test in accordance with Condition II.D.1.b(3)(c) below.

(iii) The observer shall be EPA Reference Method 9 certified.

- (iv) The observer shall record their name, the date, time, location including the dust collector ID number, description of the visual background during the observation, and the result of the observation.

- (c) Opacity Tests

- (i) The observer shall be EPA Reference Method 9 certified.
- (ii) The observer shall record their name, the date, time, location including the dust collector ID number, and the result of the observation.

- c. Bag Condition

- (1) Measurement Approach

- The Permittee shall conduct a quarterly inspection of the dust collectors.

- (2) Indicator Range

- An excursion is defined as failure to perform the quarterly inspection or poor bag condition. Excursions trigger a corrective action and reporting requirements.

- (3) Performance Criteria

- (a) The dust collectors shall be inspected visually for deterioration.
 - (b) Trained personnel shall perform the inspections and maintenance on the dust collectors.
 - (c) The Permittee shall record the results of the inspections and maintenance activities, including the dust collector ID number, in a dust collector maintenance log.

2. *Monitoring Procedures for the Process Dust Collector*

a. Applicability

The monitoring requirements in Condition II.D.2 are applicable to the following dust collector: DC-453.

b. Visible Emissions

(1) Measurement Approach

The Permittee shall conduct daily visible emissions observations and determine opacity if any visible emissions are observed.

(2) Indicator Range

An excursion is defined as any time in which visible emissions are observed. Excursions trigger an inspection, corrective action, and reporting requirements.

(3) Performance Criteria

(a) Observations shall be performed at the dust collector exhaust while the emission sources are operating.

(b) Visible Emissions Observations

(i) The Permittee shall perform EPA Reference Method 22-like procedures for one minute daily. If there are no visible emissions observed for seven consecutive days, then the observations shall be performed weekly. If visible emissions are observed during a weekly observation, then the frequency reverts back to daily until no visible emissions are observed for seven consecutive days.

(ii) If visible emissions are observed, the Permittee shall immediately conduct an EPA Reference Method 9 opacity test in accordance with Condition II.D.2.b(3)(c) below.

(iii) The observer shall be EPA Reference Method 9 certified.

(iv) The observer shall record their name, the date, time, location including the dust collector ID number, description of the visual background

during the observation, and the result of the observation.

(c) Opacity Tests

- (i) The observer shall be EPA Reference Method 9 certified.
- (ii) The observer shall record their name, the date, time, location including the dust collector ID number, and the result of the observation.

c. Pressure Drop

(1) Measurement Approach

The Permittee shall continuously measure and record the pressure drop through the dust collector using a differential pressure gauge.

(2) Indicator Range

An excursion is defined as a variation beyond the range of pressure drop for a dust collector as established during a performance test. Excursions trigger an inspection, corrective action, and reporting requirements.

(3) Performance Criteria

- (a) If the alarm sounds in the control room indicating a pressure drop excursion, the Permittee shall immediately perform an EPA Reference Method 9 test in accordance with the requirements of Condition II.D.2.b.(3).(c) above.
- (b) The Permittee shall check the pressure tap weekly to ensure there is no plugging.
- (c) The Permittee shall record the average hourly pressure drop.

d. Bag Condition

(1) Measurement Approach

The Permittee shall conduct a quarterly inspection of the dust collectors.

(2) Indicator Range

An excursion is defined as failure to perform the quarterly inspection or poor bag condition. Excursions trigger a corrective action and reporting requirements.

(3) Performance Criteria

- (a) The dust collectors shall be inspected visually for deterioration.
- (b) Trained personnel shall perform the inspections and maintenance on the dust collectors.
- (c) The Permittee shall record the results of the inspections and maintenance activities, including the dust collector ID number, in a dust collector maintenance log.

E. Raw Feed Monitoring Plan

1. The Permittee shall calculate the daily sulfur dioxide emissions rate from Kiln 4 and the Coal Mill to demonstrate compliance with Condition I.A.4 above using the following equation: [A.A.C. R18-2-306.01]

$$E = \left(\frac{4056lb}{ton-clinker} \times \frac{lb-S}{lb-rm} \right) \left(\frac{1-H_{rm}}{H_{K4}} + \left(0.60 \times \frac{H_{rm}}{H_{K4}} \right) \right)$$

where:

E	Daily SO ₂ emission rate (lb/ton-clinker)
lb-S/lb-rm	Sulfur weight-fraction measured in the daily raw feed sample
H _{rm}	Raw Mill hours of operation (hours/day)
H _{K4}	Kiln 4 hours of operation (hours/day)

2. On the last day of a calendar month, the Permittee shall calculate the average SO₂ emission rate for that month. [A.A.C. R18-2-306.01]
3. The Permittee shall take daily samples of the raw feed prior to it entering the raw mill. These samples shall be analyzed to determine the sulfur content of the raw feed. [A.A.C. R18-2-306.01]
4. *Testing Requirement* [A.A.C. R18-2-312.A]

Within 180 days of initial startup, the Permittee shall conduct a performance test to demonstrate initial compliance with the emission limit of Condition I.A.4 above using EPA Reference Method 6.

5. *Record Keeping Requirements* [A.A.C. R18-2-306.A.4]
 - a. The Permittee shall maintain daily records of the sulfur dioxide emissions rate along with the pre-heater and rolling mill sulfur dioxide removal

efficiencies used in the calculations.

- b. The Permittee shall maintain daily records of the results of the analysis of the samples required in Condition II.E.3 above.
- c. The Permittee shall record the daily operating hours of the raw mill including the date, startup time (in hours and minutes), and the shutdown time (in hours and minutes).

6. *Reporting Requirements*

[A.A.C. R18-2-306.A.5]

The Permittee shall submit monitoring reports to the Department semiannually along with the compliance certification.

F. Testing Requirements

- 1. Within 180 days of initial startup, the Permittee shall demonstrate initial compliance with the emission limits of Conditions II.A.1.b and II.A.2 through II.A.5 above using the test methods and procedures in Condition II.F.2 below and 40 CFR 63.7. Performance test results shall be documented in complete test reports that contain the information required by Conditions II.F.1.a through II.F.1.j below, as well as all other relevant information. The plan to be followed during testing shall be made available to the Director prior to testing, if requested.

[40 CFR 63.1349(a) and A.A.C. R18-2-306.A.3.c]

- a. A brief description of the process and the air pollution control system;
- b. Sampling location description(s);
- c. A description of sampling and analytical procedures and any modifications to standard procedures;
- d. Test results;
- e. Quality assurance procedures and results;
- f. Records of operating conditions during the test, preparation of standards, and calibration procedures;
- g. Raw data sheets for field sampling and field and laboratory analyses;
- h. Documentation of calculations;
- i. All data recorded and used to establish parameters for compliance monitoring; and
- j. Any other information required by the test method.

- 2. Performance tests to demonstrate initial compliance shall be conducted as specified

below:

- a. The Permittee shall demonstrate initial compliance by conducting separate performance tests as specified in Conditions II.F.2.a.(1) through II.F.2.a.(3) below while the raw mill of the in-line kiln/raw mill is under normal operating conditions, and while the raw mill of the in-line kiln/raw mill is not operating. For the clinker cooler, the Permittee shall demonstrate initial compliance by conducting a performance test as specified in Conditions II.F.2.a.(1) through II.F.2.a.(3) below. The opacity exhibited during the period of the EPA Reference Method 5 performance tests required by Condition II.F.2.a.(1) below shall be determined as required in Condition II.F.2.a.(4) below. [40 CFR 63.1349(b)(1)]

- (1) EPA Reference Method 5 shall be used to determine PM emissions. Each performance test shall consist of three separate runs under the conditions that exist when the affected source, as defined in 40 CFR 63.1340(b), is operating at the highest load or capacity level reasonably expected to occur. Each run shall be conducted for at least one hour, and the minimum sample volume shall be 0.85 dscm (30 dscf). The average of the three runs shall be used to determine compliance. A determination of the PM collected in the impingers (“back half”) of the EPA Reference Method 5 particulate sampling train is not required to demonstrate initial compliance with the PM standards of this subpart. However this shall not preclude the permitting authority from requiring a determination of the “back half” for other purposes.

[40 CFR 63.1349(b)(1)(i)]

- (2) Suitable methods shall be used to determine the in-line kiln/raw mill feed rate, except for fuels, for each run.

[40 CFR 63.1349(b)(1)(ii)]

- (3) The emission rate, E, of PM shall be computed for each run using the following equation:

[40 CFR 63.1349(b)(1)(iii)]

$$E = (C_s Q_{sd})/P$$

where:

E = emission rate of particulate matter, kg/Mg of kiln feed

C_s = concentration of PM, kg/dscm

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr

P = total kiln feed (dry basis), Mg/hr

- (4) The opacity exhibited during the period of the EPA Reference Method 5 performance tests required by Condition II.F.2.a.(1) above shall be determined through the use of a continuous opacity monitor (COM). The maximum six-minute average opacity during the three EPA Reference Method 5 test runs shall be determined during each EPA Reference Method 5 test run, and used to demonstrate initial compliance with the applicable opacity limits of Condition II.A.1.b(2) or II.A.2.b above. [40 CFR 63.1349(b)(1)(v)]
- b. The Permittee shall demonstrate initial compliance with the D/F emission limit by conducting a performance test using EPA Reference Method 23. The Permittee shall demonstrate initial compliance by conducting separate performance tests while the raw mill of the in-line kiln/raw mill is under normal operating conditions and while the raw mill of the in-line kiln/raw mill is not operating. [40 CFR 63.1349(b)(3)]
 - (1) Each performance test shall consist of three separate runs; each run shall be conducted under the conditions that exist when the affected source, as defined in 40 CFR 63.1340(b), is operating at the highest load or capacity level reasonably expected to occur. The duration of each run shall be at least three hours and the sample volume for each run shall be at least 2.5 dscm (90dscf). The concentration shall be determined for each run and the arithmetic average of the concentration measured for the three runs shall be calculated and used to determine compliance. [40 CFR 63.1349(b)(3)(i)]
 - (2) The temperature of the inlet to the in-line kiln/raw mill PMCD shall be continuously recorded during the period of the EPA Reference Method 23 test, and the continuous temperature record(s) shall be included in the performance test report. [40 CFR 63.1349(b)(3)(ii)]
 - (3) One-minute average temperatures shall be calculated for each run of the test. [40 CFR 63.1349(b)(3)(iii)]
 - (4) The run average temperature shall be calculated for each run, and the average of the run average temperatures shall be determined and included in the performance test report and will determine the applicable temperature limit in accordance with Condition II.A.1.d above. [40 CFR 63.1349(b)(3)(iv)]
3. Except as provided in Condition II.F.5 and II.F.6 below, performance tests required under Condition II.F.2.a above shall be repeated every five years, or within 6 months of the expiration of this permit, whichever comes first, except that the Permittee is not required to repeat the initial performance test of opacity for the in-line kiln/raw mill or clinker cooler. [40 CFR 63.1349(c) and A.A.C. R18-2-312]
4. Performance tests required under Condition II.F.2.b above shall be repeated every 30 months. [40 CFR 63.1349(d)]

5. The Permittee is required to repeat the performance test for the in-line kiln/raw mill as specified in Conditions II.F.2.a and II.F.2.b above within 90 days of initiating any significant change in the feed or fuel from that used in the previous performance test. [40 CFR 63.1349(e)]
6. The Permittee shall perform annual performance tests for emissions of particulate matter from the in-line kiln/raw mill stack using EPA Reference Method 5. [A.A.C. R18-2-312]
7. The Permittee shall perform annual performance tests for emissions of nitrogen oxides from the in-line kiln/raw mill stack using EPA Reference Method 7E. [A.A.C. R18-2-312]
8. The Permittee shall perform annual performance tests for emissions of sulfur dioxide from the in-line kiln/raw mill stack using EPA Reference Method 6C. [A.A.C. R18-2-312]
9. The Permittee shall conduct a performance tests for emissions of particulate matter from the clinker cooler stack using EPA Reference Method 5 once per permit term. [A.A.C. R18-2-312]

G. Record Keeping Requirements

1. The Permittee shall maintain files of all information (including all reports and notifications) required by this condition in a form suitable and readily available for inspection and review as required by 40 CFR 63.10(b)(1). The files shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. [40 CFR 63.1355(a)]
2. The Permittee shall maintain records as required by 40 CFR 63.10(b)(2) and (b)(3) and the following: [40 CFR 63.1355(b)]
 - a. All documentation supporting initial notifications and notifications of compliance status under 40 CFR 63.9;
 - b. All records of applicability determination, including supporting analyses; and
 - c. If the Permittee has been granted a waiver under 40 CFR 63.8(f)(6), any information demonstrating whether the source is meeting the requirements for a waiver of record keeping or reporting requirements.
3. For all continuous monitoring systems, the Permittee shall maintain all records required by 40 CFR 63.10(c) in addition to the record keeping requirements in Condition II.F.2 above. [40 CFR 63.1355(c)]
4. The Permittee shall keep the written start-up, shutdown, and malfunction plan on record after it is developed and approved to be made available for inspection, upon request, by the Director for the life of the Portland cement operations, or until the Portland cement operations are no longer subject to 40 CFR 63.6(e)(3). In addition,

if the start-up, shutdown, and malfunction plan is revised, the Permittee shall keep previous (i.e. superseded) versions of the start-up, shutdown, and malfunction plan on record, to be made available for inspection, upon request, by the Director, for a period of 5 years after each revision to the plan. [40 CFR 63.6(e)(3)(v)]

5. The Permittee shall maintain a log, in ink or an electronic format, of the 3-hour rolling average opacity measurements performed in accordance with Condition II.C.17 above, and of any corrective actions taken. The records shall include the date, time, results of the opacity measurement, and if the opacity exceeded 10 percent, the records shall also include a description of any correction actions taken. [A.A.C. R18-2-306.A.3.c]

H. Reporting Requirements

1. The reporting provisions of 40 CFR Part 63, Subpart A that apply to the Permittee are listed in Table 1 to Subpart LLL in 40 CFR Part 63. [40 CFR 63.1354(a)]
2. The Permittee shall comply with the reporting requirements specified in 40 CFR Part 63.10 as follows: [40 CFR 63.1354(b) and A.A.C. R18-2-306.A.5]
 - a. As required by 40 CFR Part 63.10(d)(2), the Permittee shall report the results of performance tests as part of the notification of compliance status.
 - b. As required by 40 CFR Part 63.10(d)(3), the Permittee shall report the opacity results from tests required by Condition II.F above.
 - c. As required by 40 CFR Part 63.10(d)(4), the Permittee who is required to submit progress reports as a condition of receiving an extension of compliance under 40 CFR Part 63.6(i) shall submit such reports by the dates specified in the written extension of compliance.
 - d. As required by 40 CFR Part 63.10(d)(5), if actions taken by a Permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the Permittee's startup, shutdown, and malfunction plan specified in 40 CFR Part 63.6(e)(3), the Permittee shall state such information in a semi-annual report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report may be submitted simultaneously with the excess emissions and continuous monitoring system performance reports; and
 - e. Any time an action taken by a Permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures in the startup, shutdown, and malfunction plan, the Permittee shall make an immediate report of the actions taken for that event within 2 working days, by telephone call or facsimile (fax) transmission. The immediate report shall be followed by a letter, certified by the Permittee, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, and whether any

excess emissions and/or parameter monitoring exceedances are believed to have occurred.

- f. As required by 40 CFR Part 63.10(e)(2), the Permittee shall submit a written report of the results of the performance evaluation for the continuous monitoring system required by 40 CFR Part 63.8(e). The Permittee shall submit the report simultaneously with the results of the performance test.
 - g. As required by 40 CFR Part 63.10(e)(2), the Permittee using a continuous opacity monitoring system to determine opacity compliance during any performance test required under 40 CFR Part 63.7 and described in 40 CFR 63.6(d)(6) shall report the results of the continuous opacity monitoring system performance evaluation conducted under 40 CFR 63.8(e).
 - h. As required by 40 CFR 63.10(e)(3), the Permittee equipped with a continuous emission monitor shall submit an excess emissions and continuous monitoring system performance report for any event when the continuous monitoring system data indicate the source is not in compliance with the applicable emission limitation or operating parameter limit.
 - i. The Permittee shall submit a summary report semiannually, along with the compliance certification, which contains the information specified in 40 CFR 63.10(e)(3)(vi). In addition, the summary report shall include:
 - (1) All exceedances of maximum control device inlet gas temperature limits specified in Conditions II.A.1.c and II.A.1.d above;
 - (2) All failures to calibrate thermocouples and other temperature sensors as required under Condition II.C.5.f above;
 - (3) The results of any combustion system component inspections conducted within the reporting period as required under Condition II.C.6 above; and
 - (4) All failures to comply with any provision of the operation and maintenance plan.
 - j. If the total continuous monitoring system downtime for any CEM or any continuous monitoring system (CMS) for the reporting period is 10 percent or greater of the total operating time for the reporting period, the Permittee shall submit an excess emissions and continuous monitoring system performance report along with the summary report.
3. Within 30 days of issuance of this permit, the Permittee shall submit a start-up, shutdown, and malfunction plan to be approved by the Department.
- [A.A.C. R18-2-306.A.5]
4. The Permittee shall submit any changes or additions to the operation and

maintenance to the Department for approval prior to implementation.

[A.A.C. R18-2-306.A.5]

I. Notification Requirements

1. The notification provisions of 40 CFR Part 63, Subpart A that apply to the Permittee are listed in Table 1 to Subpart LLL in 40 CFR Part 63. [40 CFR 63.1353(a)]
2. The Permittee shall comply with the notification requirements in 40 CFR Part 63.9 as follows: [40 CFR 63.1353(b)]
 - a. Notification of performance tests, as required by 40 CFR Part 63.7 and 63.9(e).
 - b. Notification of opacity and visible emission observations required by Condition II.F above in accordance with 40 CFR Part 63.6(h)(5) and Part 63.9(f).
 - c. Notification, as required by 40 CFR Part 63.9(g), of the date that the continuous emission monitor performance evaluation required by 40 CFR 63.8(e) is scheduled to begin.
 - d. Notification of compliance status, as required by 40 CFR Part 63.9(h).

J. Permit Shield

Compliance with the terms of this section shall be deemed compliance with the following applicable requirement(s) in effect on the date of permit issuance: 40 CFR 63.1343(b), 40 CFR 63.1344(a)(1), 40 CFR 63.1344(a)(2), 40 CFR 63.1344(b), 40 CFR 63.1345(a), 40 CFR 63.1346(a), 40 CFR 63.1347, 40 CFR 63.1348, 40 CFR 63.1349 (a), 40 CFR 63.1349(b)(1), 40 CFR 63.1349(b)(1)(i) through 40 CFR 63.1349(b)(1)(iii), 40 CFR 63.1349(b)(1)(v), 40 CFR 63.1349(b)(3), 40 CFR 63.1349(b)(3)(i) through 40 CFR 63.1349(b)(3)(iv), 40 CFR 63.1349(c), 40 CFR 63.1349(d), 40 CFR 63.1349(e), 40 CFR 63.1350(b), 40 CFR 63.1350(c), 40 CFR 63.1350(c)(1), 40 CFR 63.1350(c)(3), 40 CFR 63.1350(d), 40 CFR 63.1350(d)(1), 40 CFR 63.1350(d)(3), 40 CFR 63.1350(e), 40 CFR 63.1350(f), 40 CFR 63.1350(i), 40 CFR 63.1350(j), 40 CFR 63.1353(a), 40 CFR 63.1353(b), 40 CFR 63.1354(a), 40 CFR 63.1354(b), 40 CFR 63.1355(a) through 40 CFR 63.1355(c), and 40 CFR 64.3.

III. PORTLAND CEMENT OPERATIONS WHEN OPERATING KILNS 1, 2, AND 3

A. Emission Limits/Standards

1. *Particulate Matter Emission Limits/Standards*

- a. The Permittee shall not cause the discharge of particulate matter from any identifiable process source within the Portland cement plant which exceeds the amounts calculated by one of the following equations:

[A.A.C. R18-2-705.B]

- (1) For sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$$E = 4.10P^{0.67}$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour

P = the process weight rate in tons-mass per hour

- (2) For sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$$E = 55.0P^{0.11} - 40$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour

P = the process weight rate in tons-mass per hour

- b. Opacity Limitation

[A.A.C. R18-2-705.C]

The Permittee shall not cause or allow to be discharged into the atmosphere any plume from any process source within the Portland cement plant which exhibits an opacity greater than 20%.

2. *Sulfur Dioxide Emission Limitation/Standard*

[A.A.C. R18-2-705.D]

The Permittee shall not cause, allow, or permit discharge into the atmosphere of an amount in excess of six pounds of sulfur oxides, calculated as sulfur dioxide, per ton of cement kiln feed.

B. Air Pollution Control Requirement [A.A.C. R18-2-306.01 and -331.A.3.a]
Material Permit Conditions are indicated with underline and italics.

The Permittee shall maintain and operate Kilns 1, 2, and 3 in accordance with good engineering practices to ensure good combustion.

C. Monitoring Requirements [A.A.C. R18-2-306.A.3]

The Permittee shall conduct a daily visible emissions test using EPA Reference Method 22-like procedures while the kilns are operating. If visible emissions are observed, the Permittee shall conduct a 6-minute opacity test in accordance with EPA Reference Method 9.

D. Testing Requirements

1. The reference methods in 40 CFR 60, Appendix A, except as provided for in A.A.C. R18-2-312 shall be used to determine compliance with Condition III.A.1 above as follows: [A.A.C. R18-2-705.F.1]

- a. EPA Reference Method 5 for the concentration of particulate matter and the associated moisture content;
- b. EPA Reference Method 1 for sample and velocity traverses;
- c. EPA Reference Method 2 for velocity and volumetric flow rate; and
- d. EPA Reference Method 3 for gas analysis.

2. For EPA Reference Method 5, the minimum sampling time and minimum sample volume for each run except when process variables or other factors justifying otherwise to the satisfaction of the Director, shall be as follows: [A.A.C. R18-2-705.F.2]

- a. 60 minutes and 0.85 dscm (30.0 dscf) for the kiln; and
- b. 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler.

3. Total kiln feed rate, except fuels, expressed in metric tons per hour on a dry basis, shall be both: [A.A.C. R18-2-705.F.3]

- a. Determined during each testing period by suitable methods; and
- b. Confirmed by a material balance over the production system.

4. For each run, particulate matter emissions, expressed in grams/metric ton of kiln feed, shall be determined by dividing the emission rate in g/hr by the kiln feed rate. The emission rate shall be determined by the following equation: [A.A.C. R18-2-705.F.4]

$$\text{g/hr} = Q_s c$$

where

Q_s = volumetric flow rate of the total effluent in dscm/hr as determined in accordance with Condition III.C.1.c above

c = particulate concentration in g/dscm as determined in accordance with Condition III.C.1.a above

E. Record Keeping Requirements

[A.A.C. R18-2-306.A.4 and -705.E]

1. The Permittee shall record the daily kiln feed rate for each of the kilns.
2. The visible emissions observer shall record their name, the date, time, location, description of the visual background during the observations, and the result of the observations required in Condition III.C above.

F. Maximum Achievable Control Technology (MACT) Requirements Effective as of June 10, 2002

1. *Emission Limits/Standards*

a. Standards for Each Kiln

- (1) *The Permittee shall not cause to be discharged into the atmosphere from the kilns any gases which:*

[40 CFR 63.1343(c) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

- (a) *Contain particulate matter (PM) in excess of 0.15 kg per Mg (0.30 lb per ton) of feed (dry basis) to the kiln.*

- (b) *Exhibit opacity greater than 20 percent.*

- (c) *Contain dioxins/furans (D/F) in excess of:*

- (i) *0.20 ng per dscm (8.7×10^{-11} gr per dscf) (toxicity equivalent (TEQ)) corrected to seven percent oxygen; or*

- (ii) *0.40 ng per dscm (1.7×10^{-10} gr per dscf) (TEQ) corrected to seven percent oxygen, when the average of the performance test run average temperatures at the inlet to the particulate matter control device is 204°C (400°F) or less.*

- (2) *The Permittee shall operate the kiln, such that the temperature of the gas at the inlet to the kiln particulate matter control device (PMCD) does not exceed the applicable temperature limit specified in Condition III.F.1.a(3) below.*

[40 CFR 63.1344(a) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

- (3) *The temperature limit for the affected sources, as defined in 40 CFR 63.1340(b), meeting the limits of Condition III.F.1.a(2) above, is determined in accordance with Condition III.F.3.b(3)(d) below.* [40 CFR 63.1344(b) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

b. Standards for Each Clinker Cooler

[40 CFR 63.1345(a) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

- (1) *The Permittee shall not cause to be discharged into the atmosphere from the clinker cooler any gases which:*

(a) *Contain particulate matter in excess of 0.050 kg per metric ton (0.10 lb per ton) of feed (dry basis) to the kiln.*

(b) *Exhibit opacity greater than 10 percent.*

c. Standards for Raw Material Dryers

[40 CFR 63.1346(c) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

The Permittee shall not cause to be discharged into the atmosphere from the raw material dryer any gases which exhibit opacity greater than 10 percent.

d. Standards for Raw and Finish Mills

[40 CFR 63.1347 and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

The Permittee shall not cause to be discharged from the mill sweep or air separator air pollution control devices any gases which exhibit opacity in excess of 10 percent.

e. Standards for Material Handling Points

[40 CFR 63.1348 and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

The Permittee shall not cause to be discharged from any raw material, clinker, or finished product storage bin, conveying system transfer point, bagging system, and bulk loading or unloading system any gases which exhibit opacity in excess of ten percent.

2. *Monitoring Requirements*

- a. The Permittee shall comply with the operation and maintenance plan approved by the Department. Failure to comply with any provision of the operations and maintenance plan shall be a violation of the standard.

[40 CFR 63.1350(b) and A.A.C. R18-2-306.A.3]

- b. The Permittee shall monitor the opacity at each point where emissions are vented from the kiln in accordance with the following conditions:

[40 CFR 63.1350(c) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

- (1) Except as provided in Condition III.F.2.b(2) below, *the Permittee shall install, calibrate, maintain, and operate a continuous opacity monitor (COM) located at the outlet of the PM control device to continuously monitor the opacity. The COM shall be installed, maintained, calibrated, and operated as required by Subpart A of 40 CFR 63 and according to PS-1 of Appendix B of 40 CFR 60.*

- (2) *The Permittee may, in lieu of installing the continuous opacity monitoring system required in Condition III.F.2.b(1) above, monitor opacity in accordance with Conditions III.F.2.b(2)(a) through III.F.2.b(2)(b) below. If the control device exhausts through a monovalent, or if the use of a COM in accordance with the installation specifications of PS-1 of Appendix B to 40 CFR 60 is not feasible, the Permittee shall monitor opacity in accordance with the following conditions:*

- (a) *Perform daily visual opacity observations of each stack in accordance with the procedures of EPA Reference Method 9. The EPA Reference Method 9 test shall be conducted while the kiln is operating at the highest load or capacity level reasonably expected to occur within the day. The duration of the EPA Reference Method 9 test shall be at least 30 minutes each day.*

- (b) *Use the EPA Reference Method 9 procedures to monitor and record the average opacity for each 6-minute period during the test.*

- (3) *To remain in compliance, the opacity shall be maintained such that the 6-minute average opacity for any 6-minute block period does not exceed 20 percent. If the average opacity for any 6-minute block period exceeds 20 percent, this shall constitute a violation of the standard.*

- c. The Permittee shall monitor opacity from the clinker cooler at each point

where emissions are vented from the clinker cooler in accordance with the following conditions: [40 CFR 63.1350(d) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

- (1) Except as provided in Condition III.F.2.c(2) below, the Permittee shall install, calibrate, maintain, and operate a COM located at the outlet of the clinker cooler PM control device to continuously monitor the opacity. The COM shall be installed, maintained, calibrated, and operated as required by Subpart A of 40 CFR 63 and according to PS-1 of Appendix B to 40 CFR 60.
 - (2) The Permittee may, in lieu of installing the continuous opacity monitoring system required in Condition III.F.2.c(1) above, monitor opacity in accordance with Conditions III.F.2.c(2)(a) through III.F.2.c(2)(b) below. If the control device exhausts through a monovalent, or if the use of a COM in accordance with the installation specifications of PS-1 of Appendix B to 40 CFR 60 is not feasible, the Permittee shall monitor opacity in accordance with the following conditions:
 - (a) Perform daily visual opacity observations of each stack in accordance with the procedures of EPA Reference Method 9. The EPA Reference Method 9 test shall be conducted while the clinker cooler is operating at the highest load or capacity level reasonably expected to occur within the day. The duration of the EPA Reference Method 9 test shall be at least 30 minutes each day.
 - (b) Use the EPA Reference Method 9 procedures to monitor and record the average opacity for each 6-minute period during the test.
 - (3) To remain in compliance, the opacity shall be maintained such that the 6-minute average opacity for any 6-minute block period does not exceed 10 percent. If the average opacity for any 6-minute block period exceeds 10 percent, this shall constitute a violation of the standard.
- d. The Permittee shall monitor opacity from the raw mill or finish mill by conducting daily visual emissions observations of the mill sweep and air separator particulate matter control devices (PMCDs) of the affected sources, as defined in 40 CFR 63.1340(b), in accordance with the procedures of EPA Reference Method 22. The EPA Reference Method 22 test shall be conducted while the affected source is operating at the highest load or capacity level reasonably expected to occur within the day. The duration of the EPA Reference Method 22 test shall be 6 minutes. If visible emissions are observed during any

EPA Reference Method 22 visible emissions test, the Permittee must:

[40 CFR 63.1350(e) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.]

- (1) Initiate, within one-hour, the corrective actions specified in the site specific operating and maintenance plan; and
- (2) Within 24 hours of the end of the EPA Reference Method 22 test in which visible emissions were observed, conduct a visual opacity test of each stack from which visible emissions were observed in accordance with EPA Reference Method 9. The duration of the EPA Reference Method 9 test shall be 30 minutes.

e. The Permittee shall monitor D/F emissions in accordance with the following conditions: [40 CFR 63.1350(f)]

- (1) The Permittee shall install, calibrate, maintain, and operate a continuous monitor to record the temperature of the exhaust gases from the kiln at the inlet to, or upstream of, the kiln particulate matter control device (PMCD).

[40 CFR 63.1350(f)(1) and A.A.C. R18-2-331.A.3.c]

Material Permit Conditions are indicated with underline and italics.

- (a) The recorder response range must include zero and 1.5 times either of the average temperatures established according to the requirements in Condition III.F.3.b(3)(d) below.
 - (b) The reference method must be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the Administrator.
- (2) The Permittee shall monitor and continuously record the temperature of the exhaust gases from the kiln at the inlet to the kiln PMCD. [40 CFR 63.1350(f)(2) and A.A.C. R18-2-331.A.3.b]
Material Permit Conditions are indicated with underline and italics.
- (3) The three-hour rolling average temperature shall be calculated as the average of 180 successive one-minute average temperatures.
[40 CFR 63.1350(f)(3) and A.A.C. R18-2-331.A.3.b]
Material Permit Conditions are indicated with underline and italics.
- (4) Periods of time when one-minute averages are not available shall be ignored when calculating three-hour rolling averages. When one-minute averages become available, the first one-minute average is added to the previous 179 values to calculate the three-hour rolling average. [40 CFR 63.1350(f)(4)]

- (5) *The calibration of all thermocouples and other temperature sensors shall be verified at least once every three months.*

[40 CFR 63.1350(f)(6) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

- f. *The Permittee shall conduct an inspection of the components of the combustion system of each kiln at least once per year.*

[40 CFR 63.1350(i) and A.A.C. R18-2-331.A.3.b]

Material Permit Conditions are indicated with underline and italics.

- g. The Permittee shall monitor opacity in accordance with the operation and maintenance plan. [40 CFR 63.1350(j)]

h. Start-Up, Shutdown, and Malfunction Plan

- (1) The Permittee shall develop and implement a written start-up, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of start-up, shutdown, and malfunction, and a program of corrective action for malfunctioning equipment used to comply with the relevant standard. As required under 40 CFR 63.8(c)(1)(i), the plan shall identify all routine or otherwise predictable CMS malfunctions. [40 CFR 63.8(c)(1)(i)]

- (2) During periods of start-up, shutdown, and malfunction, the Permittee shall operate and maintain the Portland cement operations (including associated air pollution control equipment) in accordance with the procedures specified in the start-up, shutdown, and malfunction plan. [40 CFR 63.6(e)(3)(ii)]

- (3) To satisfy the requirements to develop a start-up, shutdown, and malfunction plan, the Permittee may use the Portland cement operations standard operating procedures (SOP) manual, an Occupational Safety and Health Administration (OSHA), or other plan, provided the alternative plans meet all the requirements of 40 CFR 63.6(e)(3) and are made available for inspection when requested by the Director. [40 CFR 63.6(e)(3)(vi)]

- (4) The Director may require the Permittee to make reasonable revisions to the start-up, shutdown, and malfunction plan, if the Director finds that the plan: [40 CFR 63.6(e)(3)(vii)]

- (a) Does not address a start-up, shutdown, or malfunction event that has occurred;
- (b) Fails to provide for the operation of the Portland cement operations (including associated air pollution control equipment) during a start-up, shutdown, or malfunction event in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels

required by all relevant standards; or

- (c) Does not provide adequate procedures for correcting malfunctioning process and/or air pollution control equipment as quickly as practicable.
- (5) If the start-up, shutdown, and malfunction plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction, but was not included in the start-up, shutdown, and malfunction plan at the time the Permittee developed the plan, the Permittee shall revise the start-up, shutdown, and malfunction plan and submit it to the Department for approval within 45 days after the event to include detailed procedures for operating and maintaining the Portland cement operations during similar malfunction events, and a program of corrective action for similar malfunctions of process or air pollution control equipment.

[40 CFR 63.6(e)(3)(viii)]

i. Continuous Monitoring System Requirements

[40 CFR 63.8(c)]

- (1) The Permittee shall maintain and operate each continuous monitoring system (CMS) as specified in Condition III.F.2.i and in a manner consistent with good air pollution control practices.
- (a) The Permittee shall ensure the immediate repair or replacement of CMS parts to correct “routine” or otherwise predictable CMS malfunctions as defined in the start-up, shutdown, and malfunction plan required under Condition III.F.2.h above. The Permittee shall keep the necessary parts for routine repairs of the affected equipment readily available. If the plan is followed and the CMS is repaired immediately, this action shall be reported in the semi-annual start-up, shutdown, and malfunction report required under 40 CFR 63.10(d)(5)(i).
 - (b) For those malfunctions or other events that affect the CMS and are not addressed by the start-up, shutdown, and malfunction plan, the Permittee shall report actions that are not consistent with the start-up, shutdown, and malfunction plan within 24 hours after commencing actions inconsistent with the plan. The Permittee shall send a follow-up report within 2 weeks after commencing actions inconsistent with the plan that either certifies that corrections have been made or includes a corrective action plan and schedule. The Permittee shall provide proof that repair parts have been ordered or any other records that would indicate that the delay in making repairs is beyond his or her control.
 - (c) The Director’s determination of whether acceptable

operation and maintenance procedures are being used will be based on information that may include, but is not limited to, review of operation and maintenance procedures, operation and maintenance records, manufacturing recommendations and specifications, and inspection of the CMS. Operation and maintenance procedures written by the CMS manufacturer and other guidance also can be used to maintain and operate each CMS.

- (2) All CMS shall be installed such that representative measurements of emissions or process parameters from the affected source are obtained.
- (3) All CMS shall be installed, operational, and the data verified as specified in the relevant standard either prior to or in conjunction with conducting performance tests under 40 CFR 63.7. Verification of operational status shall, at a minimum, include completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system.
- (4) Except for system breakdowns, out-of-control periods, repairs, maintenance periods, calibration checks, and zero (low-level) and high-level calibration drift adjustments, all CMS, including COMS, shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:
 - (a) All COMS shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.
- (5) Unless otherwise approved by the Director, minimum procedures for COMS shall include a method for producing a simulated zero opacity condition and an upscale (high-level) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. Such procedures shall provide a system check of all the analyzer's internal optical surfaces and all electric circuitry, including the lamp and photodetector assembly normally used in the measurement of opacity.
- (6) The Permittee of a CMS installed in accordance with the provisions of 40 CFR 63 and the applicable CMS performance specification(s) shall check the zero (low-level) and high-level calibration drifts at least once daily in accordance with the written procedure specified

in the performance evaluation plan developed under 40 CFR 63.8(e)(3)(i) and 40 CFR 63.8(e)(3)(iii). The zero (low-level) and high-level calibration drifts shall be adjusted, at a minimum, whenever the 24-hour zero (low-level) drift exceeds two times the limits of the applicable performance specification(s) specified in the relevant standard. The system must allow the amount of excess zero (low-level) and high-level drift measured at the 24-hour interval checks to be recorded and quantified, whenever specified. For COMS, all optical and instrumental surfaces exposed to the effluent gases shall be cleaned prior to performing the zero (low-level) and high-level drift adjustments; the optical surfaces and instrumental surfaces shall be cleaned when the cumulative automatic zero compensation, if applicable, exceeds 4 percent opacity.

- (7) A CMS is out of control if:
 - (a) The zero (low-level), mid-level (if applicable), or high-level calibration drift (CD) exceeds two times the applicable CD specification in the applicable performance specification or in the relevant standard; or
 - (b) The CMS fails a performance test audit (e.g., cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit; or
 - (c) The COMS CD exceeds two times the limit in the applicable performance specification in the relevant standard.
- (8) When the CMS is out of control, the Permittee shall take the necessary corrective action and shall repeat all necessary tests which indicate that the system is out of control. The Permittee shall take corrective action and conduct retesting until the performance requirements are below the applicable limits. The beginning of the out-of-control period is the hour the Permittee conducts a performance check (e.g., calibration drift) that indicates an exceedance of the performance requirements established under 40 CFR 63. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system is within the allowable limits. During the period the CMS is out of control, recorded data shall not be used in data averages and calibrations, or to meet any data availability requirement established under 40 CFR 63.

- (9) The Permittee of a CMS that is out of control as defined in Conditions III.F.2.i(7) and III.F.2.i(8) above shall submit all information concerning out-of-control periods, including start and end dates, hours, and descriptions of corrective actions taken, in the excess emissions and continuous monitoring system performance report required under 40 CFR 63.10(e)(3).

3. *Testing Requirements*

- a. Within 180 days after the effective date of Condition III.F, the Permittee shall demonstrate initial compliance with the emission limits of Conditions III.F.1.a(1) and III.F.1.b through III.F.1.e above using the test methods and procedures in Condition III.F.3.b below and 40 CFR 63.7. Performance test results shall be documented in complete test reports that contain the information required by Conditions III.F.3.a(1) through III.F.3.a(10) below, as well as all other relevant information. The plan to be followed during testing shall be made available to the Director prior to testing, if requested.

[40 CFR 63.1349(a)]

- (1) A brief description of the process and the air pollution control system;
 - (2) Sampling location description(s);
 - (3) A description of sampling and analytical procedures and any modifications to standard procedures;
 - (4) Test results;
 - (5) Quality assurance procedures and results;
 - (6) Records of operating conditions during the test, preparation of standards, and calibration procedures;
 - (7) Raw data sheets for field sampling and field and laboratory analyses;
 - (8) Documentation of calculations;
 - (9) All data recorded and used to establish parameters for compliance monitoring; and
 - (10) Any other information required by the test method.
- b. Performance tests to demonstrate initial compliance shall be conducted as specified below:

- (1) The Permittee shall demonstrate initial compliance by conducting a performance test as specified in Conditions III.F.3.b(1)(a) through III.F.3.b(1)(c) below. For the clinker cooler, the Permittee shall demonstrate initial compliance by conducting a performance test as specified in Conditions III.F.3.b(1)(a) through III.F.3.b(1)(c) below. The opacity exhibited during the period of the EPA Reference Method 5 performance tests required by Condition III.F.3.b(1)(a) below shall be determined as required in Condition III.F.3.b(1)(d) and III.F.3.b(1)(e) below. [40 CFR 63.1349(b)(1)]

(a) EPA Reference Method 5 shall be used to determine PM emissions. Each performance test shall consist of three separate runs under the conditions that exist when the affected source, as defined in 40 CFR 63.1340(b), is operating at the highest load or capacity level reasonably expected to occur. Each run shall be conducted for at least one hour, and the minimum sample volume shall be 0.85 dscm (30 dscf). The average of the three runs shall be used to determine compliance. A determination of the PM collected in the impingers (“back half”) of the EPA Reference Method 5 particulate sampling train is not required to demonstrate initial compliance with the PM standards of this subpart. However this shall not preclude the permitting authority from requiring a determination of the “back half” for other purposes. [40 CFR 63.1349(b)(1)(i)]

(b) Suitable methods shall be used to determine the kiln feed rate, except for fuels, for each run.

[40 CFR 63.1349(b)(1)(ii)]

(c) The emission rate, E, of PM shall be computed for each run using the following equation:

[40 CFR 63.1349(b)(1)(iii)]

$$E = (C_s Q_{sd})/P$$

where:

E = emission rate of particulate matter, kg/Mg of kiln feed

C_s = concentration of PM, kg/dscm

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr

P = total kiln feed (dry basis), Mg/hr

(d) Except as provided in Condition III.F.3.b(1)(e) below, the opacity exhibited during the period of the EPA Reference Method 5 performance tests required by Condition

III.F.3.b(1)(a) above shall be determined through the use of a continuous opacity monitor (COM). The maximum six-minute average opacity during the three EPA Reference Method 5 test runs shall be determined during each EPA Reference Method 5 test run, and used to demonstrate initial compliance with the applicable opacity limits of Conditions III.F.1.a(1)(b) or III.F.1.b(1)(b) above.
[40 CFR 63.1349(b)(1)(v)]

- (e) The Permittee may, in lieu of installing the continuous opacity monitoring system required by Condition III.F.3.b(1)(d) above, conduct an opacity test in accordance with EPA Reference Method 9 during each EPA Reference Method 5 performance test required by Condition III.F.3.b(1)(a) above. If the control device exhausts through a monovent, or if the use of a COM in accordance with the installation specifications of Performance Specification 1 (PS-1) of Appendix B to 40 CFR 60 during each EPA Reference Method 5 performance test required by Condition III.F.3.b(1)(a) above. The maximum six-minute average opacity shall be determined during the three EPA Reference Method 5 test runs, and used to demonstrate initial compliance with the applicable opacity limits of Conditions III.F.1.a(1)(b) or III.F.1.b(1)(b) above.
[40 CFR 63.1349(b)(1)(vi)]

- (2) If the facility is subject to limitations on opacity and is not subject to Condition III.F.3.b(1) above, the Permittee shall demonstrate initial compliance with the opacity limit by conducting a test in accordance with EPA Reference Method 9. The performance test shall be conducted under the conditions that exist when the affected source, as defined in 40 CFR 63.1340(b), is operating at the highest load or capacity level reasonably expected to occur. The maximum six-minute average opacity exhibited during the test period shall be used to determine whether the affected source is in initial compliance with the standard. The duration of the EPA Reference Method 9 performance test shall be 3-hours (thirty 6-minute averages), except that the duration of the EPA Reference Method 9 performance test may be reduced to 1-hour if the following conditions apply:
[40 CFR 63.1349(b)(2)]

- (a) There are no individual readings greater than 10 percent opacity; and
- (b) There are no more than three readings of 10 percent for the first 1-hour period.

- (3) The Permittee shall demonstrate initial compliance with the D/F emission limit by conducting a performance test using EPA Reference Method 23. [40 CFR 63.1349(b)(3)]

(a) Each performance test shall consist of three separate runs; each run shall be conducted under the conditions that exist when the affected source, as defined in 40 CFR 63.1340(b), is operating at the highest load or capacity level reasonably expected to occur. The duration of each run shall be at least three hours and the sample volume for each run shall be at least 2.5 dscm (90dscf). The concentration shall be determined for each run and the arithmetic average of the concentration measured for the three runs shall be calculated and used to determine compliance. [40 CFR 63.1349(b)(3)(i)]

(b) The temperature of the inlet to the kiln PMCD shall be continuously recorded during the period of the EPA Reference Method 23 test, and the continuous temperature record(s) shall be included in the performance test report. [40 CFR 63.1349(b)(3)(ii)]

(c) One-minute average temperatures shall be calculated for each run of the test. [40 CFR 63.1349(b)(3)(iii)]

(d) The run average temperature shall be calculated for each run, and the average of the run average temperatures shall be determined and included in the performance test report and will determine the applicable temperature limit in accordance with Condition III.F.1.a(3) above. [40 CFR 63.1349(b)(3)(iv)]

c. Except as provided in Condition III.F.3.e below, performance tests required under Condition III.F.3.b(1) above shall be repeated every five years, except that the Permittee is not required to repeat the initial performance test of opacity for the kiln or clinker cooler. [40 CFR 63.1349(c)]

d. Performance tests required under Condition III.F.3.b(3) above shall be repeated every 30 months. [40 CFR 63.1349(d)]

e. The Permittee is required to repeat the performance test for the kiln as specified in Conditions III.F.3.b(1) and III.F.3.b(3) above within 90 days of initiating any significant change in the feed or fuel from that used in the previous performance test. [40 CFR 63.1349(e)]

4. *Record Keeping Requirements*

- a. The Permittee shall maintain files of all information (including all reports and notifications) required in a form suitable and readily available for inspection and review as required by 40 CFR 63.10(b)(1). The files shall be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

[40 CFR 63.1355(a)]

- b. The Permittee shall maintain records as required by 40 CFR 63.10(b)(2) and (b)(3) and the following: [40 CFR 63.1355(b)]
 - (1) All documentation supporting initial notifications and notifications of compliance status under 40 CFR 63.9;
 - (2) All records of applicability determination, including supporting analyses; and
 - (3) If the Permittee has been granted a waiver under 40 CFR 63.8(f)(6), any information demonstrating whether the source is meeting the requirements for a waiver of record keeping or reporting requirements.
- c. If the source utilizes a continuous monitoring system, the Permittee shall maintain all records required by 40 CFR 63.10(c) in addition to the record keeping requirements in Condition III.F.4.b above. [40 CFR 63.1355(c)]
- d. The Permittee shall keep the written start-up, shutdown, and malfunction plan on record after it is developed to be made available for inspection, upon request, by the Director for the life of the Portland cement operations, or until the Portland cement operations are no longer subject to 40 CFR 63.6(e)(3). In addition, if the start-up, shutdown, and malfunction plan is revised, the Permittee shall keep previous (i.e. superseded) versions of the start-up, shutdown, and malfunction plan on record, to be made available for inspection, upon request, by the Director, for a period of 5 years after each revision to the plan. [40 CFR 63.6(e)(3)(v)]

5. *Reporting Requirements*

- a. The reporting provisions of 40 CFR Part 63, Subpart A that apply to the Permittee are listed in Table 1 to Subpart LLL in 40 CFR Part 63. [40 CFR 63.1354(a)]
- b. The Permittee shall comply with the reporting requirements specified in 40 CFR Part 63.10 as follows: [40 CFR 63.1354(b) and A.A.C. R18-2-306.A.5]
 - (1) As required by 40 CFR Part 63.10(d)(2), the Permittee shall report the results of performance tests as part of the notification of compliance status.
 - (2) As required by 40 CFR Part 63.10(d)(3), the Permittee shall report the opacity results from tests required by Condition III.F.3 above.
 - (3) As required by 40 CFR Part 63.10(d)(4), the Permittee who is required to submit progress reports as a condition of receiving an

extension of compliance under 40 CFR Part 63.6(i) shall submit such reports by the dates specified in the written extension of compliance.

- (4) As required by 40 CFR Part 63.10(d)(5), if actions taken by a Permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the Permittee's startup, shutdown, and malfunction plan specified in 40 CFR Part 63.6(e)(3), the Permittee shall state such information in a semi-annual report. Reports shall only be required if a startup, shutdown, or malfunction occurred during the reporting period. The startup, shutdown, and malfunction report may be submitted simultaneously with the excess emissions and continuous monitoring system performance reports; and
- (5) Any time an action taken by a Permittee during a startup, shutdown, or malfunction (including actions taken to correct a malfunction) is not consistent with the procedures in the startup, shutdown, and malfunction plan, the Permittee shall make an immediate report of the actions taken for that event within 2 working days, by telephone call or facsimile (fax) transmission. The immediate report shall be followed by a letter, certified by the Permittee, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, and whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred.
- (6) As required by 40 CFR Part 63.10(e)(2), the Permittee shall submit a written report of the results of the performance evaluation for the continuous monitoring system required by 40 CFR Part 63.8(e). The Permittee shall submit the report simultaneously with the results of the performance test.
- (7) As required by 40 CFR Part 63.10(e)(2), the Permittee using a continuous opacity monitoring system to determine opacity compliance during any performance test required under 40 CFR Part 63.7 and described in 40 CFR 63.6(d)(6) shall report the results of the continuous opacity monitoring system performance evaluation conducted under 40 CFR 63.8(e).
- (8) As required by 40 CFR 63.10(e)(3), the Permittee equipped with a continuous emission monitor shall submit an excess emissions and continuous monitoring system performance report for any event when the continuous monitoring system data indicate the source is not in compliance with the applicable emission limitation or operating parameter limit.

- (9) The Permittee shall submit a summary report semiannually, along with the compliance certification, which contains the information specified in 40 CFR 63.10(e)(3)(vi). In addition, the summary report shall include:
- (a) All exceedances of maximum control device inlet gas temperature limits specified in Conditions III.F.1.a(2) and III.F.1.a(3) above;
 - (b) All failures to calibrate thermocouples and other temperature sensors as required under Condition III.F.2.e(5) above;
 - (c) The results of any combustion system component inspections conducted within the reporting period as required under Condition III.F.2.f above; and
 - (d) All failures to comply with any provision of the operation and maintenance plan.
- (10) If the total continuous monitoring system downtime for any CEM or any continuous monitoring system (CMS) for the reporting period is 10 percent or greater of the total operating time for the reporting period, the Permittee shall submit an excess emissions and continuous monitoring system performance report along with the summary report.

c. Within 30 days of issuance of this permit, the Permittee shall submit a start-up, shutdown, and malfunction plan to be approved by the Department.
[A.A.C. R18-2-306.A.5]

d. The Permittee shall submit any changes or additions to the operation and maintenance to the Department for approval prior to implementation.
[A.A.C. R18-2-306.A.5]

6. *Notification Requirements*

a. The notification provisions of 40 CFR Part 63, Subpart A that apply to the Permittee are listed in Table 1 to Subpart LLL in 40 CFR Part 63.
[40 CFR 63.1353(a)]

b. The Permittee shall comply with the notification requirements in 40 CFR Part 63.9 as follows:
[40 CFR 63.1353(b)]

- (1) Notification of performance tests, as required by 40 CFR Part 63.7

and 63.9(e).

- (2) Notification of opacity and visible emission observations required by Condition III.F.3 above in accordance with 40 CFR Part 63.6(h)(5) and Part 63.9(f).
- (3) Notification, as required by 40 CFR Part 63.9(g), of the date that the continuous emission monitor performance evaluation required by 40 CFR 63.8(e) is scheduled to begin.
- (4) Notification of compliance status, as required by 40 CFR Part 63.9(h).

F. Permit Shield

Compliance with the terms of this section shall be deemed compliance with the following applicable requirement(s) in effect on the date of permit issuance: 40 CFR 63.1343(c), 40 CFR 63.1344(a), 40 CFR 63.1344(b), 40 CFR 63.1345(a), 40 CFR 63.1346(c), 40 CFR 63.1347, 40 CFR 63.1348, 40 CFR 63.1349 (a), 40 CFR 63.1349(b)(1), 40 CFR 63.1349(b)(1)(i) through 40 CFR 63.1349(b)(1)(iii), 40 CFR 63.1349(b)(1)(v), 40 CFR 63.1349(b)(1)(vi), 40 CFR 63.1349(b)(2), 40 CFR 63.1349(b)(3), 40 CFR 63.1349(b)(3)(i) through 40 CFR 63.1349(b)(3)(iv), 40 CFR 63.1349(c), 40 CFR 63.1349(d), 40 CFR 63.1349(e), 40 CFR 63.1350(b), 40 CFR 63.1350(c), 40 CFR 63.1350(d), 40 CFR 63.1350(e), 40 CFR 63.1350(f), 40 CFR 63.1350(f)(1) through 40 CFR 63.1350(f)(3), 40 CFR 63.1350(f)(6), 40 CFR 63.1350(i), 40 CFR 63.1350(j), 40 CFR 63.1353(a), 40 CFR 63.1353(b), 40 CFR 63.1354(a), 40 CFR 63.1354(b), 40 CFR 63.1355(a) through 40 CFR 63.1355(c), A.A.C. R18-2-705.B, A.A.C. R18-2-705.C, A.A.C. R18-2-705.D, A.A.C. R18-2-705.E, and A.A.C. R18-2-705.F(1) through A.A.C. R18-2-705.F(4).

IV. QUARRY AND RAW MATERIAL CRUSHING

A. Emission Limitations/Standards

[A.A.C. R18-2-306.01 and -331.A.3.a]

Material Permit Conditions are indicated with underline and italics.

The Permittee shall not utilize more than 10 tons of explosives in any 24-hour consecutive period.

B. Air Pollution Control Requirement

[A.A.C. R18-2-306.A.2, -331.A.3.d, and -331.A.3.e]

Material Permit Conditions are indicated with underline and italics.

The Permittee shall install, maintain, and operate spray bars, including periods of startup, shutdown, and malfunction, to control visible emissions from crushing, screening, handling, transporting or conveying of materials, or other operations likely to result in significant amounts of airborne dust, or the material shall be adequately wet to minimize visible emissions to the extent practicable.

C. Monitoring Requirement

[A.A.C. R18-2-306.A.3.a]

Upon issuance of this permit, an EPA Reference Method 9 or Method 22 observation, whichever is more appropriate, of quarry emissions shall be conducted by a certified Method 9 observer each month.

D. Record Keeping Requirements

[A.A.C. R18-2-306.A.4]

1. The Permittee shall maintain daily records of the explosives used at the quarry.
2. Upon completion of the observation required in Condition IV.C above, the Permittee shall record the name of the observer, date, time, location, results, and type of observation.

E. Non-New Source Performance Standards (NSPS) Standards

1. *Applicability*

[40 CFR 60.670(c)(2) and 60.670(e)]

A non-NSPS affected facility is defined as each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station which was constructed before August 31, 1983, or which was constructed after August 31, 1983, which has a primary crusher capacity of less than 150 tons per hour. For each non-NSPS affected facility, refer to the following applicable conditions.

2. *Particulate Matter Emission Limitations/Standards*

- a. The Permittee shall not cause, allow, or permit the discharge of particulate matter into the atmosphere, except as fugitive emissions, in any one hour from any gravel or crushed stone processing plant, in excess of the amounts calculated by one of the following equations: [A.A.C. R18-2-722.B]

- (1) For sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$$E = 4.10P^{0.67}$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour

P = the process weight rate in tons-mass per hour

- (2) For sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$$E = 55.0P^{0.11} - 40$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour

P = the process weight rate in tons-mass per hour

- b. The Permittee shall not cause or allow to be discharged into the atmosphere any plume from the quarry which exhibits an opacity greater than 40%.

[A.A.C. R18-2-702.B.1]

3. *Air Pollution Control Requirement*

[A.A.C. R18-2-722.D]

Spray bar pollution controls shall be utilized in accordance with “EPA Control of Air Emissions from Process Operations in the Rock Crushing Industry” (EPA 340/1-79-002), “Wet Suppression System” (pages 15-34, amended as of January 1979 (and no future amendments or editions)), as incorporated herein by reference and on file with the Office of the Secretary of State, with placement of spray bars and nozzles as required by the Director to minimize air pollution.

4. *Monitoring Requirement*

[A.A.C. R18-2-722.F and -331.A.3.c]

Material Permit Conditions are indicated with underline and italics.

The Permittee shall install, calibrate, maintain, and operate monitoring devices which can be used to determine daily the process weight of gravel or crushed stone produced. The weighing devices shall have an accuracy of ±5% over their operating range.

5. *Testing Requirement*

[A.A.C. R18-2-722.H]

- a. The reference methods in Appendix A of 40 CFR 60 shall be used to determine compliance with the standards prescribed as follows:

- (1) EPA Reference Method 5 for concentration of particulate matter and moisture content;
- (2) EPA Reference Method 1 for sample and velocity traverses;
- (3) EPA Reference Method 2 for velocity and volumetric flow rate; and
- (4) EPA Reference Method 3 for gas analysis.

- b. For EPA Reference Method 5, the sampling time for each run shall be at least 60 minutes and the minimum sample volume is 0.85 dscm (30 dscf), except that shorter sampling times or smaller volumes, when necessitated

by process variables or other factors, may be approved by the Director. Sampling shall not be started until 30 minutes after start-up and shall be terminated before shut down procedures commence. The Permittee shall eliminate cyclonic flow during performance tests in a manner acceptable to the Director.

6. *Record Keeping Requirement*

[A.A.C. R18-2-722.G]

The Permittee shall maintain daily records of the crushed material produced in tons.

F. NEW SOURCE PERFORMANCE STANDARDS (NSPS) REQUIREMENTS

1. *Applicability*

[40 CFR 60.670(c)(2) and 60.670(e)]

An NSPS affected facility is defined as each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station which was constructed after August 31, 1983, and which has a primary crusher capacity of more than 150 tons per hour. For each affected facility, refer to the following applicable conditions.

2. *Standards for Particulate Matter*

[40 CFR 60.672 and R18-2-331]

[Material permit conditions are indicated by underline and italics]

a. *The Permittee shall not cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other equipment any stack emissions which:*

(1) Contain particulate matter in excess of 0.05 g/dscm; and

(2) *Exhibit greater than 7 percent opacity.*

b. *The Permittee shall not cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity,* except as provided in Conditions IV.F.2.c, IV.F.2.d, and IV.F.2.e below.

c. *The Permittee shall not cause to be discharged into the atmosphere from any crusher,* at which a capture system is not used, *fugitive emissions which exhibit greater than 15 percent opacity.*

d. Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of Condition IV.F.2.

e. If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limits in Condition IV.F.2.a, IV.F.2.b, and IV.F.2.c above, or the building enclosing the affected facility or facilities must comply with the following emission limits:

(1) The Permittee shall not cause to be discharged into the atmosphere from any building enclosing any transfer point on a conveyor belt or

any other affected facility any visible fugitive emissions except emissions from a vent as defined in 40 CFR 60.671.

- (2) The Permittee shall not cause to be discharged into the atmosphere from any vent of any building enclosing any transfer point on a conveyor belt or any other affected facility emissions which exceed the stack emission limits in Condition IV.F.2.a above.

f. The Permittee shall not cause to be discharged into the atmosphere from any baghouse that controls emissions from only an individual, enclosed storage bin, stack emissions which exhibit greater than 7 percent opacity.

g. The Permittee shall comply with the emission limits in Condition IV.F.2.a above for any multiple storage bins with combined stack emissions.

h. The Permittee shall not cause to be discharged into the atmosphere any visible emissions from:

- (1) Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to the next crusher, grinding mill or storage bin.
- (2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, where such screening operations, bucket elevators, and belt conveyors process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

3. *Testing Requirements*

a. In conducting the performance tests required in 40 CFR 60.8, the Permittee shall use as reference methods and procedures the test methods in Appendix A of 40 CFR 60 or other methods and procedures as specified in Condition IV.F.3, except as provided in 40 CFR 60.8(b). Acceptable alternative methods and procedures are given in Condition IV.F.3.h below.

[40 CFR 60.675(a)]

b. The Permittee shall determine compliance with the particulate matter standards in Condition IV.F.2.a above as follows: [40 CFR 60.675(b)]

- (1) Method 5 or Method 17 shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5, if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be

operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121°C (250°F), to prevent water condensation on the filter.

- (2) Method 9 and the procedures in 40 CFR 60.11 shall be used to determine opacity.

- c. In determining compliance with the particulate matter standards in Conditions IV.F.2.b and IV.F.2.c above, the Permittee shall use Method 9 and the procedures in 40 CFR 60.11, with the following additions:

[40 CFR 60.675(c)(1)]

- (1) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).
- (2) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9, Section 2.1) must be followed.
- (3) For facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.

- d. In determining compliance with the opacity of stack emissions from any baghouse that controls emissions only from an individual enclosed storage bin under Condition IV.F.2.f above, using Method 9, the duration of the Method 9 observations shall be 1 hour (ten 6-minute averages).

[40 CFR 60.675(c)(2)]

- e. When determining compliance with the fugitive emissions standard for any facility described under Condition IV.F.2.b above, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:

[40 CFR 60.675(c)(3)]

- (1) ~~There are no individual readings greater than 10 percent opacity; and~~
- (2) ~~There are no more than 3 readings of 10 percent for the 1-hour period.~~

- f. ~~When determining compliance with the fugitive emissions standard for any~~

crusher at which a capture system is not used as described under Condition IV.F.2.a above, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply: [40 CFR 60.675(c)(4)]

- (1) There are no individual readings greater than 15 percent opacity; and
- (2) There are no more than 3 readings of 15 percent for the 1-hour period.

g. In determining compliance with Condition IV.F.2.e above, the Permittee shall use Method 22 to determine fugitive emissions. The performance test shall be conducted while all affected facilities inside the building are operating. The performance test for each building shall be at least 75 minutes in duration, with each side of the building and the roof being observed for at least 15 minutes. [40 CFR 60.675(d)]

h. The Permittee may use the following as alternatives to the reference methods and procedures specified in this section: [40 CFR 60.675(e)]

- (1) For the method and procedure of Condition IV.F.3.a above, if emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:
 - (a) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.
 - (b) Separate the emissions so that the opacity of emissions from each affected facility can be read.

i. If, after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting any re-scheduled performance test required, the Permittee shall submit a notice to the Director at least 7 days prior to any rescheduled performance test. [40 CFR 60.675(f)]

j. Initial Method 9 performance tests under 40 CFR 60.11 and Section IV.F.3 are not required for: [40 CFR 60.675(h)]

- (1) Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to, but not including the next crusher, grinding mill or storage bin.

- (2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, that process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

4. ***Reporting Requirements***

- a. In order to comply with 40 CFR 60.670(d), the Permittee shall submit to the Director the following information about the existing facility being replaced and the replacement piece of equipment. [40 CFR 60.676(a)]

- (1) For a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station:

- (a) The rated capacity in tons per hour of the existing facility being replaced; and
- (b) The rated capacity in tons per hour of the replacement equipment.

- (2) For a screening operation:

- (a) The total surface area of the top screen of the existing screening operation being replaced; and
- (b) The total surface area of the top screen of the replacement screening operation.

- (3) For a conveyor belt:

- (a) The width of the existing belt being replaced; and
- (b) The width of the replacement conveyor belt.

- (4) For a storage bin:

- (a) The rated capacity in tons of the existing storage bin being replaced; and
- (b) The rated capacity in tons of replacement storage bins.

- b. The Permittee shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in Section IV.F.2 above, including reports of opacity observations made using Method 9 to demonstrate compliance with Conditions IV.F.2.b, IV.F.2.c,

and IV.F.2.f above, and reports of observations using Method 22 to demonstrate compliance with Condition IV.F.2.e. [40 CFR 60.676(f)]

- c. The Permittee of any screening operation bucket elevator, or belt conveyor that processes saturated material and is subject to Condition IV.F.2.h above and subsequently processes unsaturated materials, shall submit a report of this change within 30 days following such change. This screening operation, bucket elevator, or belt conveyor is then subject to the 10 percent opacity limit in Condition IV.F.2.b above and the emission test requirements of 40 CFR 60.11 and of this section. Likewise a screening operation, bucket elevator, or belt conveyor that processes unsaturated material but subsequently processes saturated material shall submit a report of this change within 30 days following such change. This screening operation, bucket elevator, or belt conveyor is then subject to the no visible emission limit in Condition IV.F.2.h above. [40 CFR 60.676(g)]

G. Permit Shield

Compliance with the terms of this section shall be deemed compliance with the following applicable requirement(s) in effect on the date of permit issuance: A.A.C. R18-2-702.B(1), A.A.C. R18-2-722.B, A.A.C. R18-2-722.D, A.A.C. R18-2-722.F, A.A.C. R18-2-722.G, A.A.C. R18-2-722.H, 40 CFR 60.670(c)(2), 40 CFR 60.670(e), 40 CFR 60.672, 40 CFR 60.675(a), 40 CFR 60.675(b), 40 CFR 60.675(c), 40 CFR 60.675(d), 40 CFR 60.675(e), 40 CFR 60.675(g), 40 CFR 60.675(h), 40 CFR 60.676(a), 40 CFR 60.676(f), and 40 CFR 60.676(g).

V. COAL PREPARATION OPERATIONS

A. Particulate Matter Emission Limitations/Standards

1. On and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, the Permittee shall not cause to be discharged into the atmosphere from any thermal dryer gases which:

[40 CFR 60.252(a) and A.A.C. R18-2-331.A.3.f]

Material Permit Conditions are indicated with italics and underline.

- a. Contain particulate matter in excess of 0.070 g/dscm (0.031 gr/dscf).

- b. Exhibit 20 percent opacity or greater.

2. On and after the date on which the performance test required to be conducted by 40 CFR 60.8 is completed, the Permittee shall not cause to be discharged into the atmosphere from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal, gases which exhibit 20 percent opacity or greater.

[40 CFR 60.252(c) and A.A.C. R18-2-331.A.3.f]

Material Permit Conditions are indicated with italics and underline.

B. Monitoring Requirements

1. *The Permittee shall install, calibrate, maintain, and continuously operate monitoring devices as follows:* [40 CFR 60.253(a), 40 CFR 60.253(a)(1), and A.A.C. R18-2-331.A.3.c]
Material Permit Conditions are indicated with underline and italics.
 - a. *A monitoring device for the measurement of the temperature of the gas stream at the exit of the thermal dryer on a continuous basis. The monitoring device is to be certified by the manufacturer to be accurate within $\pm 3^{\circ}$ Fahrenheit.*
2. *All monitoring devices are to be recalibrated annually in accordance with procedures under 40 CFR 60.13(b).* [40 CFR 60.253(b) and A.A.C. R18-2-331.A.3.c]
Material Permit Conditions are indicated with underline and italics.]
3. Upon issuance of this permit, an EPA Reference Method 9 or Method 22 observation, whichever is more appropriate, of coal preparation emissions shall be conducted by a certified Method 9 observer each month. [A.A.C. R18-2-306.A.3.a]

C. Test Method Requirements

1. In conducting the performance tests required in 40 CFR 60.8, the Permittee shall use as reference methods and procedures the test methods in Appendix A of 40 CFR 60 or other methods and procedures as specified in Condition V.C.2 below, except as provided in 40 CFR 60.8(b). [40 CFR 60.254(a)]
2. The Permittee shall determine compliance with the particulate matter standards in Condition V.A above as follows: [40 CFR 60.254(b) and A.A.C. R18-2-306.A.3.a]
 - a. EPA Reference Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). Sampling shall begin no less than 30 minutes after startup and shall terminate before shutdown procedures begin.
 - b. Upon issuance of this permit, an observation using EPA Reference Method 9 and the procedures in 40 CFR 60.11 shall be conducted by a certified Method 9 observer each quarter. Upon completion of the observation, the Permittee shall record the name of the observer, date, time, location, results, and type of observation.
3. Within 180 days of initial startup, the Permittee shall conduct a performance test for carbon monoxide emissions from the Coal Mill stack using EPA Reference Method 10B. [A.A.C. R18-2-312.A]

D. Record Keeping Requirement

[A.A.C. R18-2-306.A.4]

1. The Permittee shall maintain a log of all calibrations performed as required under Condition V.B.2 above.
2. Upon completion of the observation required in Condition V.B.3 above, the Permittee shall record the name of the observer, date, time, location, results, and type of observation.

E. Permit Shield

Compliance with the terms of this section shall be deemed compliance with the following applicable requirement(s) in effect on the date of permit issuance: 40 CFR 60.252(a), 40 CFR 60.252(c), 40 CFR 60.253(a), 40 CFR 60.253(a)(1), 40 CFR 60.253(b), 40 CFR 60.254(a), and 40 CFR 60.254(b).

VI. UNCLASSIFIED POINT SOURCES

A. Applicability

Section VI applies to all point sources which do not have any applicable conditions in Sections II through V above.

B. Particulate Matter Emission Limitations/Standards

1. The Permittee shall not cause, allow, or permit the discharge of particulate matter into the atmosphere, except as fugitive emissions, in any one hour from any unclassified point source operating at the facility, in excess of the amounts calculated by one of the following equations: [A.A.C. R18-2-730.A]

- a. For sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$$E = 4.10P^{0.67}$$

where:

- E = the maximum allowable particulate emissions rate in pounds-mass per hour
P = the process weight rate in tons-mass per hour

- b. For sources having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$$E = 55.0P^{0.11} - 40$$

where:

- E = the maximum allowable particulate emissions rate in pounds-mass per hour
P = the process weight rate in tons-mass per hour

2. For the purposes of Condition VI.B.1 above, the total process weight from all similar units employing a similar type process shall be used in determining the maximum allowable emission of particulate matter. [A.A.C. R18-2-730.B]

3. The Permittee shall not emit gaseous or odorous materials in such quantities or concentrations as to cause air pollution. [A.A.C. R18-2-730.D]

4. The Permittee shall not cause or allow to be discharged into the atmosphere any plume from any unclassified point source which exhibits an opacity greater than 40%. [A.A.C. R18-2-702.B.1]

C. Monitoring Requirement [A.A.C. R18-2-306.A.3.a]

Upon issuance of this permit, an EPA Reference Method 9 or Method 22 observation, whichever is more appropriate, of unclassified point source emissions shall be conducted by a certified Method 9 observer each month.

D. Record Keeping Requirements [A.A.C. R18-2-306.A.4]

Upon completion of the observation required in Condition VI.C above, the Permittee shall record the name of the observer, date, time, location, results, and type of observation.

E. Permit Shield

Compliance with the terms of this section shall be deemed compliance with the following applicable requirement(s) in effect on the date of permit issuance: A.A.C. R18-2-702.B(1), A.A.C. R18-2-730.A, A.A.C. R18-2-730.B, and A.A.C. R18-2-730.D.

VII. NON-POINT SOURCES

A. Emission Limitations/Standards

1. *Fugitive Dust Control Plan* [A.A.C. R18-2-306.A.3]

The Permittee shall operate the facility in accordance with its fugitive dust plan.

2. *Open Areas, Dry Washes, or Riverbeds* [A.A.C. R18-2-604.a and -604.b]

a. The Permittee shall not cause, allow, or permit a building or its appurtenances, or a building or subdivision site, or a driveway, or a parking area, or a vacant lot or sales lot, or an urban or suburban open area to be constructed, used, altered, repaired, demolished, cleared, or leveled, or the earth to be moved or excavated without taking reasonable precautions to limit excessive amounts of particulate matter from becoming airborne.

b. Dust and other types of air contaminants shall be kept to a minimum by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means.

- c. The Permittee shall not cause, allow, or permit a vacant lot, or an urban or suburban open area, to be driven over or used by motor vehicles, trucks, cars, cycles, bikes, or buggies, or by animals such as horses, without taking reasonable precautions to limit excessive amounts of particulates from becoming airborne.

3. *Roadways and Streets* [A.A.C. R18-2-605]

- a. The Permittee shall not cause, allow, or permit the use, repair, construction or reconstruction of a roadway or alley without taking reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne. Dust and other particulates shall be kept to a minimum by employing temporary paving, dust suppressants, wetting down, detouring or by other reasonable means.
- b. The Permittee shall not cause, allow, or permit transportation of materials likely to give rise to airborne dust without taking reasonable precautions, such as wetting, applying dust suppressants, or covering the load, to prevent particulate matter from becoming airborne. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or by other means.

4. *Material Handling* [A.A.C. R18-2-606]

The Permittee shall not cause, allow, or permit crushing, screening, handling, transporting, or conveying of materials or other operations likely to result in significant amounts of airborne dust without taking reasonable precautions, such as the use of spray bars, wetting agents, dust suppressants, covering the load, and hoods to prevent excessive amounts of particulate matter from becoming airborne.

5. *Storage Piles* [A.A.C. R18-2-607]

- a. The Permittee shall not cause, allow, or permit organic or inorganic dust producing material to be stacked, piled, or otherwise stored without taking reasonable precautions such as chemical stabilization, wetting, or covering to prevent excessive amounts of particulate matter from becoming airborne.
- b. Stacking and reclaiming machinery utilized at storage piles shall be operated at all times with a minimum fall of material and in such manner, or with the use of spray bars and wetting agents, as to prevent excessive amounts of particulate matter from becoming airborne.

6. *Evaluation of Non-Point Source Emissions* [A.A.C. R18-2-612]

Opacity of an emission from any non-point source shall not be greater than 40%

measured in accordance with EPA Reference Method 9.

7. *Roadway and Site Cleaning Machinery* [A.A.C. R18-2-804]

- a The Permittee shall not cause, allow, or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than 10 consecutive seconds, the opacity of which exceeds 40%. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes.
- b The Permittee shall not cause, allow, or permit the cleaning of any site, roadway, or alley without taking reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions may include applying dust suppressants. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or by other means.

8. *Open Burning* [A.A.C. R18-2-602]

Except as provided in A.A.C. R18-2-602.C(1), C(3), and C(4), and except when permitted to do so by either ADEQ or the local officer delegated the authority for issuance of open burning permits, the Permittee shall not conduct open burning.

B. Monitoring Requirements [A.A.C. R18-2-306.A.3.a]

Upon issuance of this permit, an EPA Reference Method 22-like visual observation of non-point source emissions shall be conducted daily by a certified EPA Reference Method 9 observer.

C. Record Keeping Requirements [A.A.C. R18-2-306.A.4]

- 1. The Permittee shall maintain records of the dates on which any of the activities listed in Condition VII.A.2 through VII.A.8 above were performed and all control measures which were employed.
- 2. The Permittee shall maintain copies of all open burning permits on file.
- 3. Upon completion of the observation required in Condition VII.B above, the Permittee shall record the name of the observer, date, time, location, results, and any corrective actions taken.

D. Permit Shield

Compliance with the terms of this section shall be deemed compliance with the following applicable requirement(s) in effect on the date of permit issuance: A.A.C. R18-2-602,

VIII. AMBIENT MONITORING REQUIREMENTS

[A.A.C. R18-2-306.A.3.d]

A. PM-10 Monitoring

The Permittee shall maintain and operate ambient PM-10 samplers at two sites previously approved by ADEQ. The network shall comply with the following requirements:

1. General Requirements

- a. Samplers: Andersen Dichotomous PM-10 sampler model SA241M or equivalent
- b. Particle sizes to be measured: 0-2.5 microns and 2.5-10 microns

2. Sample Laboratory Analysis

- a. Each sample in the two size ranges shall be weighted and their concentrations calculated, totaled, and then reported as 24-hour concentrations of total PM-10 in standard micrograms per cubic meter. The results for each of the two size ranges shall also be reported.
- b. A laboratory analysis shall be performed on three samples, one with the highest PM-10 mass, one with the lowest PM-10 mass, and one with the PM-10 mass closest to the average of the quarter. The laboratory mass measurements and subsequent data reporting shall be done in accordance with the respective manufacturer's instruction manuals and in accordance with the specification contained in the latest revision of Section 2.10 of the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, U.S. Environmental Protection Agency.
- c. The following elemental mass concentrations shall be determined and recorded as 24-hour average concentrations expressed as microgram per cubic meter: Aluminum (Al), Arsenic (As), Barium (Ba), Beryllium (Be), Cadmium (Cd), Calcium (Ca), Chlorine (Cl), Chromium (Cr), Copper (Cu), Iron (Fe), Lead (Pb), Manganese (Mn), Mercury (Hg), Nickel (Ni), Phosphorus (P), Potassium (K), Selenium (Se), Silicon (Si), Sodium (Na), Strontium (Sr), Sulfur (S), Titanium (Ti), Vanadium (V), Zinc (Zn), Zirconium (Zr).

3. Quality Assurance

- a. All samplers shall be operated, calibrated, and maintained in accordance with the procedures set forth in the respective manufacturer's instruction

manuals and in accordance with the latest revision of Section 2.10 of the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, U.S. Environmental Protection Agency. The samplers shall be sited, maintained, operated in accordance with the applicable requirements of Appendix J of 40 CFR 50, Appendix A of 40 CFR 58, and Appendix E of 40 CFR 58.

- b. The Permittee shall maintain, calibrate, and operate a second dichotomous PM-10 sampler of the same brand and model as is currently required. This second unit shall be used to concurrently measure PM-10 at one of the sites in operation. These collocated samplers shall be operated on the same sampling schedule to determine PM-10 precision for the PCC particulate monitoring network. PM-10 precision data shall be calculated and reported as required by Appendix A of 40 CFR 58.

4. *Reports*

- a. Quarterly reports summarizing the PM-10 measurements and the precision data collected pursuant to this section shall be submitted before the 90th day of the following quarter. An annual report summarizing the quality assurance as required by Appendix A of 40 CFR 58 shall be submitted before the 90th day of the quarter following the fourth quarter of the calendar year. Two copies of the quarterly and annual reports shall be mailed, one to the Air Assessment Section and the other to the Permits Section of the Air Quality Division of ADEQ.
- b. The reports shall contain the following information specified by site. All concentration data shall be presented in micrograms per cubic meter.
 - (1) Date of each measurement;
 - (2) Particulate mass concentration in microgram per cubic meter in the size range 0 to 2.5 microns;
 - (3) Particulate mass concentration in microgram per cubic meter in the size range 2.5 to 10 microns;
 - (4) Total PM-10 concentration for each measurement;
 - (5) Precision estimates for the PM-10 data collected each quarter in the PCC network;
 - (6) Average PM-10 concentration for the quarter; and
 - (7) Results of laboratory analysis performed for the elemental mass concentrations required pursuant to Condition VIII.A.2 above.

5. *Location of PM-10 Sites and Sampling Frequency*

- a. Site locations for the PM-10 samplers shall remain the same as approved previously by ADEQ. If the Department concludes that other locations are preferable and feasible at a future date, the site locations shall be changed.
- b. Samples shall be collected on the national 6-day midnight to midnight sampling schedule. In the event that one of the three samplers malfunctions during a scheduled 24-hour period, special 24-hour samples using all three samplers shall be collected (regardless of the 6-day sampling schedule) starting as soon as practicable after the correction of the malfunction problem.
- c. Sampling, as may be required by the Department during a facility upset or failure of air pollution control equipment, shall supercede the normal 6-day sampling schedule.

B. Nitrogen Oxides (NO_x) Monitoring

The Permittee shall install, maintain, and operate approved ambient nitrogen oxides monitoring systems at sites previously approved by ADEQ. Each nitrogen oxides monitoring system shall comply with the following requirements:

1. *General Requirements*

- a. Analyzer: Thermal Environmental Instruments, Inc. (TEI) model 42C or equivalent
- b. Data Logger: Environmental Systems Corporation (ESC) model 8800 or equivalent
- c. Parameters to be measured: Nitrogen oxides (NO_x), Nitric Oxide (NO), and Nitrogen Dioxide (NO₂) measured by difference

2. *Analyzer Operations*

The analyzers' operations and subsequent data reporting shall be done in accordance with the respective manufacturer's instruction manuals and in accordance with the specification contained in the latest revision of Section 2.3 of the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, U.S. Environmental Protection Agency. The analyzers shall be operated in such a manner that they are recording accurate, valid ambient NO_x/NO/NO₂ data at least 22 hours per calendar day. Hourly average ambient NO_x/NO/NO₂ data shall be recorded in parts per million (ppm).

3. *Quality Assurance*

The analyzers shall be operated calibrated, and maintained in accordance with the procedures set forth in the respective manufacturer's instruction manuals and in accordance with the latest revision of Section 2.3 of the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, U.S. Environmental Protection Agency. The analyzers shall be sited, maintained and operated in accordance with the applicable requirements of Appendix F of 40 CFR 50, Appendix A of 40 CFR 58, and Appendix E of 40 CFR 58. Precision data for the NO_x/NO/NO₂ measurements shall be calculated and reported as required by Appendix A of 40 CFR 58.

4. *Reports*

- a. A report summarizing the NO_x/NO/NO₂ measurements and the precision data collected pursuant to this section shall be submitted before the 90th day of the following quarter. An annual report summarizing the quality assurance data as required by Appendix A of 40 CFR 58 shall be submitted before the 90th day of the quarter following the fourth quarter of the calendar year. Two copies of the quarterly and annual reports shall be mailed, one to the Air Assessment Section and the other to the Compliance Section of the Air Quality Division of ADEQ.
- b. The quarterly reports shall contain the following information specified by site. All concentration data shall be presented in ppm:
 - (1) Date and hour of each measurement;
 - (2) Hourly average NO_x/NO/NO₂ concentration data in ppm;
 - (3) Valid hours of data for each parameter (NO_x/NO/NO₂), expressed as the percentage obtained by dividing the actual monthly valid data hours by the number of hours in that month;
 - (4) Precision estimates for the data NO_x/NO/NO₂ collected each quarter by the PCC analyzers;
 - (5) Average quarterly and annual NO_x/NO/NO₂ concentration data; and
 - (6) Maximum hourly NO_x/NO/NO₂ concentration data for each quarter.
- c. Computer files in ASCII format, containing the hourly average NO_x/NO/NO₂ measurement data, shall be available for automated collection by the ADEQ Data Collection System (DCS) on a computer server

provided by PCC. These daily data files must be available at least once per day, be in a consistent format, and be accessible at times acceptable to ADEQ. The computer files must contain:

- (1) Date and hour of each measurement at each site; and
- (2) Hourly average NO_x/NO/NO₂ concentration data in ppm.

5. *Location of NO_x/NO/NO₂ Sites and Monitoring Start-Up*

- a. The site locations for the NO_x/NO/NO₂ analyzers shall be approved by ADEQ as required in Condition VIII.D below. ADEQ will conduct a site visit with PCC personnel before the NO_x/NO/NO₂ monitoring systems begin operation to verify compliance with siting requirements, installation, and probe placement, and operational protocols and practices, as well as to coordinate and begin testing of routine access to the daily data reports. If the Department concludes that other locations are preferable and feasible at a future date, the site location shall be changed.
- b. NO_x/NO/NO₂ measurements shall be made continuously. In the event of analyzer system malfunction, the units shall be repaired or replaced with the same or equivalent analyzers within 48 hours. Monitoring shall resume as soon as practicable after the correction of the malfunction problem.

C. Meteorological Monitoring

1. A meteorological monitoring station shall be collocated with the NO_x/NO/NO₂ monitoring, to record wind speed, vector wind direction, standard deviation of wind direction, Δt, and relative humidity. This monitoring shall be installed, maintained, and operated in compliance with EPA guidance. A monitoring protocol that addresses the items below shall be submitted and approved by ADEQ prior to installation.
2. All general requirements, meteorological station operations, and quality assurance initiatives shall be addressed in the Monitoring Protocol.
3. *Reports*
 - a. A report summarizing the meteorological data measurements collected pursuant to this section shall be submitted before the 90th day of the following quarter. An annual report summarizing the quality assurance data shall be submitted before the 90th day of the quarter following the fourth quarter of the calendar year. Two paper and two electronic copies of the quarterly and annual reports shall be mailed, one of each to the Air Assessment Section and the other to the Compliance Section of the Air Quality Division of ADEQ.
 - b. The quarterly reports shall contain the information addressed in the monitoring protocol.
 - c. Computer files in the ASCII format, containing the hourly average meteorological measurement data specified above, shall be available for automated collection by the ADEQ DCS on a computer server provided by PCC. These daily data files must be available at least once per day, be in

a consistent format, and be accessible at times acceptable to ADEQ. The computer files must contain:

- (1) Date and hour of each measurement at each site; and
- (2) Hourly average meteorological parameters specified above, in the appropriate measurement units, per the monitoring protocol.

4. *Location of Meteorological Monitoring Station and Monitoring Start-Up*

- a. The site location shall be approved previously by ADEQ as required in Condition VIII.D below. ADEQ will conduct a site visit with PCC personnel before the NO_x/NO/NO₂ monitoring systems and meteorological stations begin operation to verify compliance with siting requirements, installation, and operational protocols and practices, as well as to coordinate and begin testing of routine access to the daily data reports. If the Department concludes that other locations are preferable and feasible at a future date, the site location shall be changed.
- b. The meteorological data measurements shall be made continuously. In the event of system malfunction, the unit shall be repaired or replaced within 48 hours. Monitoring shall resume as soon as practicable after the correction of the malfunction problem.

D. Modeling Requirements

1. The commencement of NO_x/NO/NO₂ and meteorological monitoring is contingent upon appropriate site selection. Monitoring will include siting of:
 - a. A background NO_x/NO/NO₂ monitoring system;
 - b. A maximum ambient concentration, source oriented NO_x/NO/NO₂ monitoring system; and
 - c. A meteorological station.
2. A refined modeling analysis will be used to determine the appropriate location of these monitors, and must be preceded by a modeling protocol as outlined by the Department.
3. The modeling protocol must be approved by the Department prior to submittal of the modeling analysis. The modeling analysis must be approved prior to submittal of the monitoring protocol, and the monitoring protocol must be approved prior to the installation of the monitors.

E. Time Line

1. A modeling protocol must be submitted on or before 90 calendar days from the date of issuance of permit number 1001001.
2. The modeling protocol will be reviewed by the Department on or before 120 calendar days from the date of issuance of permit number 1001001.
3. Following approval of the modeling protocol, a refined modeling analysis must be submitted on or before 150 calendar days from the date of issuance of permit number 1001001.
4. The modeling analysis must be reviewed by the Department, on or before 210 calendar days from the date of issuance of permit number 1001001.
5. Following approval of the modeling analysis, a monitoring protocol which address the $\text{NO}_x/\text{NO}/\text{NO}_2$ and meteorological monitoring must be submitted on or before 270 calendar days from the date of issuance of permit number 1001001.
6. The monitoring protocol will be reviewed by the Department, on or before 330 calendar days from the date of issuance of permit number 1001001.
7. Monitoring must commence on or before one year from the date of issuance of permit number 1001001.
8. Following two full years of monitoring from the date of project start-up, the Permittee may petition the Department to review the monitoring requirements. The Department will decide whether any or all of the monitoring shall continue or cease.

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ATTACHMENT "C":**EQUIPMENT LIST**

Air Quality Control Permit No. 1001785

for

Phoenix Cement Company

Process	Equipment Type	Equipment ID Number	Date of Mfg.	Applicability			
				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart 000	40 CFR 64 CAM Rule
Raw Material	Apron Feeder	AF-101	pre-8/31/83				
Primary &	Apron Feeder	AF-102	pre-8/31/83				
Secondary	Surge Bin	B-101	pre-8/31/83				
Crushing &	Belt Conveyor	BC-101	pre-8/31/83				
Storage	Belt Conveyor	BC-101A	pre-8/31/83				
	Belt Conveyor	BC-101B	pre-8/31/83				
	Belt Conveyor	BC-101C	post-8/31/83			X	
	Belt Conveyor	BC-101D	post-8/31/83			X	
	Belt Conveyor	BC-102	pre-8/31/83				
	Belt Conveyor	BC-102A	pre-8/31/83				
	Belt Conveyor	BC-102B	post-8/31/83			X	
	Belt Conveyor	BC-103A	pre-8/31/83				
	Belt Conveyor	BC-103B	pre-8/31/83				
	Belt Conveyor	BC-103C	post-8/31/83			X	
	Belt Conveyor	BC-103D	post-8/31/83			X	
	Belt Conveyor	BC-103E	post-8/31/83			X	
	Belt Conveyor	BC-104	pre-8/31/83				
	Belt Conveyor	BC-104A	post-8/31/83			X	
	Belt Conveyor	BC-104B	post-8/31/83			X	
	Belt Conveyor	BC-214	pre-8/31/83				X
	Primary Crusher	CR-101	1958				
	Secondary Crusher	CR-102	1958				

Process	Equipment Type	Equipment ID Number	Date of Mfg.	Applicability			
				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Raw Material	Wobler Feeder	F-101	1959				
Primary &	Vibrating Feeder	VF-102	1959				
Secondary	Vibrating Screen	VS-101	1958				
Crushing &	Vibrating Screen	VS-102	1958				
Storage	Vibrating Screen	VS-103	1958				
	Rotary Feeder	RF-201	post-8/31/83			X	
	Sample Mill	RM-201	1959				X
	Weigh Feeder	W-101	1959				
	Screw Conveyor	SC-101	post-8/31/83				
	Fly Ash Bin	B-201	post-8/31/83				
Raw Material	Belt Conveyor	BC-201	1959				
Storage &	Belt Conveyor	BC-201A	1959				
Handling	Belt Conveyor	BC-202	1959				
	Belt Conveyor	BC-203	1959				
	Belt Conveyor	BC-205	1959				
	Belt Conveyor	BC-209	1959				
	Belt Conveyor	BC-210	1959				
	Belt Conveyor	BC-211	1959				
	Belt Conveyor	BC-212	1959				
	Belt Conveyor	BC-213A	1959				
	Belt Conveyor	BC-301	1959				X
	Belt Conveyor	BC-206	1959				X
	Belt Conveyor	BC-213	1959				X
	Reclaimer	R-201	1959				
	Reclaimer	R-202	1959				
	Stacker	ST-201	1959				
	Stacker	ST-202	1959				

Process	Equipment Type	Equipment ID Number	Date of Mfg.	Applicability			
				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Raw Material	Detachable Trailer	TT-201	1959				
Storage &	Detachable Trailer	TT-202	1959				
Handling	Detachable Trailer	TT-203	1959				
	Detachable Trailer	TT-204	1959				
Raw Grinding	Air Slide	AC-301	pre-3/24/98	X			
System No. 1	Air Slide	AC-302	pre-3/24/98	X			
	Air Slide	AC-316	pre-3/24/98	X			
	Raw Mix Bin	B-301	pre-3/24/98	X			
	Belt Conveyor	BC-300	pre-3/24/98	X			
	Belt Conveyor	BC-303	pre-3/24/98	X			
	Ball Mill	BM-301	1959	X			
	Elevator	E-301	pre-3/24/98	X			
	Separator	SE-300	pre-3/24/98	X			
	Cyclone	CY-300	pre-3/24/98	X			
	Cyclone	CY-301	pre-3/24/98	X			
	FK Pump	PN-301	1959	X			
	FK Pump	PN-341	1959	X			
	Screw Conveyor	SC-301	pre-3/24/98	X			
	Weigh Feeder	W-301	pre-3/24/98	X			
	Raw Storage Silo	S-601	1959	X			
	Raw Storage Silo	S-602	1959	X			
	Raw Storage Silo	S-605	1959	X			
Existing	#1 Kiln**	K-401	pre-3/24/98	X*			
Pyroprocessing	#2 Kiln**	K-402	pre-3/24/98	X*			
System	#3 Kiln**	K-403	pre-3/24/98	X*			
	Clinker Breaker #1**	CB-401	pre-3/24/98	X*			
	Clinker Breaker #2**	CB-402	pre-3/24/98	X*			

Process	Equipment Type	Equipment ID Number	Date of Mfg.	Applicability			
				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Existing	Clinker Breaker #3**	CB-403	pre-3/24/98	X*			
Pyroprocessing	Clinker Cooler #1**	CC-401	pre-3/24/98	X*			
System	Clinker Cooler #2**	CC-402	pre-3/24/98	X*			
	Clinker Cooler #3**	CC-403	pre-3/24/98	X*			
	Prehtr CY 1 st stage K401**	CY-401	pre-3/24/98	X*			
	Prehtr CY 1 st stage K401**	CY-402	pre-3/24/98	X*			
	Prehtr CY 2 nd stage K401**	CY-403	pre-3/24/98	X*			
	Prehtr CY 2 nd stage K401**	CY-404	pre-3/24/98	X*			
	Prehtr CY 1 st stage K402**	CY-408	pre-3/24/98	X*			
	Prehtr CY 1 st stage K402**	CY-409	pre-3/24/98	X*			
	Prehtr CY 2 nd stage K402**	CY-410	pre-3/24/98	X*			
	Prehtr CY 2 nd stage K402**	CY-411	pre-3/24/98	X*			
	Buells K401**	CY-415	pre-3/24/98	X*			
	Buells K402**	CY-416	pre-3/24/98	X*			
	Buells K403**	CY-417	pre-3/24/98	X*			
	Hot Air CY CC401**	CY-406	pre-3/24/98	X*			
	Hot Air CY CC402**	CY-407	pre-3/24/98	X*			
	Hot Air CY CC403**	CY-412	pre-3/24/98	X*			
	Dust Recycle Bin K401**	B-404	pre-3/24/98	X*			
	Dust Recycle Bin K402**	B-405	pre-3/24/98	X*			
	Dust Recycle Bin K403**	B-406	pre-3/24/98	X*			

Process	Equipment Type	Equipment ID Number	Date of Mfg.	Applicability			
				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Swing Grinding	Air Slide	AC-304	pre-3/24/98	X			
System No. 2	Air Slide	AC-305	pre-3/24/98	X			
	Air Slide	AC-306	pre-3/24/98	X			
	Air Slide	AC-311	pre-3/24/98	X			
	Air Slide	AC-313	pre-3/24/98	X			
	Air Slide	AC-314	pre-3/24/98	X			
	Air Slide	AC-317	pre-3/24/98	X			
	Air Slide	AC-321	pre-3/24/98	X			
	Air Slide	AC-322	pre-3/24/98	X			
	Air Slide	AC-329	pre-3/24/98	X			
	Raw Mix Clinker Bin	B-302	pre-3/24/98	X			
	Belt Conveyor	BC-304	pre-3/24/98	X			
	Ball Mill	BM-302	pre-3/24/98	X			
	Cyclone	CY-302	pre-3/24/98	X			
	Bucket Elevator	E-302	pre-3/24/98	X			
	FK Pump	PN-302	pre-3/24/98	X			
	Screw Conveyor	SC-303	pre-3/24/98	X			
	Screw Conveyor	SC-304	pre-3/24/98	X			
	Screw Conveyor	SC-308	pre-3/24/98	X			
	Screw Conveyor	SC-311	pre-3/24/98	X			
	Separator	SE-303	pre-3/24/98	X			
	Separator	SE-304	pre-3/24/98	X			
	Weigh Feeder	W-303	pre-3/24/98	X			
Blending and	Air Slide	AC-607	pre-3/24/98	X			
Kiln Feed	Air Slide	AC-608	pre-3/24/98	X			
	Raw Meal Silo	S-601	pre-3/24/98	X			
	Raw Meal Silo	S-602	pre-3/24/98	X			

Process	Equipment Type	Equipment ID Number	Date of Mfg.	Applicability			
				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Blending and	Homogenizing Silo	S-605	pre-3/24/98	X			
Kiln Feed	Air Slide	AC-609	pre-3/24/98	X			
	FK Pump	PN-601	2001/2002	X			
	FK Pump	PN-602	2001/2002	X			
	Air Slide	AC-600	pre-3/24/98	X			
	Air Slide	AC-601	pre-3/24/98	X			
	Air Slide	AC-601A	pre-3/24/98	X			
	Air Slide	AC-602	pre-3/24/98	X			
	Air Slide	AC-602A	pre-3/24/98	X			
	Air Slide	AC-603	pre-3/24/98	X			
	Air Slide	AC-604	pre-3/24/98	X			
	Air Slide	AC-606	pre-3/24/98	X			
	Bucket Elevator	E-600	pre-3/24/98	X			
Kiln Feed	Alleviator	AM-407	2001/2002	X			
	Bin	B-407	2001/2002	X			
	Air Slide	AC-408	2001/2002	X			
	Air Slide	AC-409	2001/2002	X			
	Air Slide	AC-410	2001/2002	X			
	Air Slide	AC-413	2001/2002	X			
	Air Slide	AC-414	2001/2002	X			
	Air Slide	AC-415	2001/2002	X			
	Feeder	WS-404	2001/2002	X			
Raw Grinding	Apron Feeder	AF-360	2001/2002	X			
System No. 3	Air Slide	AC-360	2001/2002	X			
	Air Slide	AC-361	2001/2002	X			
	Air Slide	AC-362	2001/2002	X			
	Air Slide	AC-363	2001/2002	X			
	Air Slide	AC-364	2001/2002	X			

Process	Equipment Type	Equipment ID Number	Date of Mfg.	Applicability			
				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Raw Grinding	Belt Conveyor	BC-360	2001/2002	X			
System No. 3	Belt Conveyor	BC-361	2001/2002	X			
	Belt Conveyor	BC-363	2001/2002	X			
	Bucket Elevator	E-360	2001/2002	X			
	Raw Mill Seal Bin	B-360	2001/2002	X			
	Cyclone	CY-360	2001/2002	X			
	Cyclone	CY-361	2001/2002	X			
	Raw Mill	RM-306	2001/2002	X			
	Separator	SE-360	2001/2002	X			
	Spillage Conveyor	BC-362	2001/2002	X			
	FK Pump	PN-402	2001/2002	X			
	FK Pump	PN-403	2001/2002	X			
	Belt Conveyor	SC-430	2001/2002	X			
	Belt Conveyor	SC-431	2001/2002	X			
	Belt Conveyor	SC-432	2001/2002	X			
Pyroprocessing	Elevator (passenger)	E-403	2001/2002	X			
System	Pre-Heater	PH-404	2001/2002	X			
	Pre-Heater	PH-405	2001/2002	X			
	Pre-Heater	PH-406	2001/2002	X			
	Pre-Heater	PH-407	2001/2002	X			
	Pre-Heater	PH-408	2001/2002	X			
	Kiln	K-404	2001/2002	X			
	Clinker Cooler	CC-404	2001/2002	X			
	Screw Conveyor	SC-461	2001/2002	X			
	Screw Conveyor	SC-462	2001/2002	X			
	Screw Conveyor	SC-463	2001/2002	X			
	Screw Conveyor	SC-464	2001/2002	X			
	Screw Conveyor	SC-465	2001/2002	X			

Process	Equipment Type	Equipment ID Number	Date of Mfg.	Applicability			
				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Pyroprocessing	Screw Conveyor	SC-466	2001/2002	X			
System	Screw Conveyor	SC-467	2001/2002	X			
Clinker	Belt Conveyor	BC-402	2001/2002	X			
Transport	Belt Conveyor	BC-403	2001/2002	X			
	Bucket Elevator	E-404	2001/2002	X			
	Pan Conveyor	DBC-404	2001/2002	X			
	Vibrating Feeder	VF-404	2001/2002	X			
Clinker	Belt Conveyor	BC-216	pre-3/24/98	X			
Storage and	Belt Conveyor	BC-217	pre-3/24/98	X			
Transport	Belt Conveyor	BC-309	pre-3/24/98	X			
	Clinker Storage Dome	DO-200	2001/2002	X			
	Clinker Storage Dome	DO-201	2001/2002	X			
	Belt Conveyor	BC-310	2001/2002	X			
	Clinker Elevator**	E-401	pre-3/24/98	X*			
	Clinker Silo**	S-401	pre-3/24/98	X*			
	Clinker Hopper**	HP-401	pre-3/24/98	X*			
	Vibrating Feeder**	VF-401	pre-3/24/98	X*			
	Clinker Stacker**	ST-202	pre-3/24/98	X*			
	Clinker Reclaimer**	R-202	pre-3/24/98	X*			
	Vibrating Screen**	VS-201	pre-3/24/98	X*			
	Clinker In-Line Crusher**	CR-201	pre-3/24/98	X*			
Coal and Coke	Belt Conveyor	BC-460	pre-3/24/98		X		X
Handling and	Belt Conveyor	BC-461	pre-3/24/98		X		
Grinding	Belt Conveyor	BC-462	pre-3/24/98		X		X
	Belt Conveyor	BC-463	pre-3/24/98		X		X
	Belt Feeder	BC-464	pre-3/24/98				

Process	Equipment Type	Equipment ID Number	Date of Mfg.	Applicability			
				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Coal and Coke	Crusher	CR-460	pre-3/24/98		X		X
Handling and	Vibrating Feeder	F-460	pre-3/24/98		X		
Grinding	Vibrating Feeder	F-461	pre-3/24/98		X		
	Screw Feeder	SC-465-0	pre-3/24/98		X		
	Belt Conveyor	BC-451	2001/2002		X		X
	Belt Conveyor	BC-453	2001/2002		X		X
	Coal Bin	B-450	2001/2002		X		X
	Pet-Coke Bin	B-451	2001/2002				X
	Weigh Feeder	W-450	2001/2002		X		X
	Weigh Feeder	W-451	2001/2002				X
	Belt Conveyor	BC-454	2001/2002		X		X
	Separator	SE-450	pre-3/24/98		X		X
	Coal Mill	RM-450	2001/2002		X		X
	Screw Conveyor	SC-456	2001/2002		X		
	Rail Car Hopper	HP-460	pre-3/24/98		X		
	Coal Unelevator	UE-460	pre-3/24/98		X		
	Coal Hopper	HP-461	pre-3/24/98		X		
	Coke Unelevator	UE-461	pre-3/24/98		X		
	Coke Hopper	HP-462	pre-3/24/98		X		
	Coal/Coke Bin K401**	B-460	pre-3/24/98				
	Coal/Coke Bin K402**	B-461	pre-3/24/98				
	Coal/Coke Bin K403**	B-462	pre-3/24/98				
	Raymond Bowl Mill K401**	RM-460	pre-3/24/98		X		
	Raymond Bowl Mill K402**	RM-461	pre-3/24/98		X		
	Raymond Bowl Mill K403**	RM-462	pre-3/24/98		X		
				Applicability			
Process	Equipment Type	Equipment ID Number	Date of Mfg.				

				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Coal and Coke	Pulverized Fuel Bin	B-452	2001/2002		X		
Grinding &	Pulverized Fuel Bin	B-453	2001/2002		X		
Firing	Screw Conveyor	SC-453	2001/2002		X		X
	Screw Conveyor	SC-454	2001/2002		X		X
	Screw Conveyor	SC-455	2001/2002		X		X
Mill Feed/	Gypsum Bin	B-300	pre-3/24/98	X			
Clinker &	Clinker Bin	B-303	pre-3/24/98	X			
Gypsum	Clinker Bin	B-340	pre-3/24/98	X			
Handling	Gypsum Bin	B-341	pre-3/24/98	X			
	Screw Conveyor	SC-312	pre-3/24/98	X			
	Weigh Feeder	W-345	pre-3/24/98	X			
	Belt Conveyor	BC-312	2001/2002	X			
	Belt Conveyor	BC-313	2001/2002	X			
	Belt Conveyor	BC-350	2001/2002	X			
	Clinker Bin	B-350	2001/2002	X			
	Gypsum Bin	B-351	2001/2002	X			
	Scavenger Conveyor	SC-350	2001/2002	X			
	Scavenger Conveyor	SC-351	2001/2002	X			
	Weigh Feeder	W-350	2001/2002	X			
	Weigh Feeder	W-351	2001/2002	X			
Finish Milling	Gypsum Hopper	HP-301	pre-3/24/98	X*			
	Gypsum Vibrating Feeder	VF-301	pre-3/24/98	X*			
	Dryer BM302	FR-302	pre-3/24/98	X*			
Finish Mill	Air Slide	AC-307	pre-3/24/98	X			
No. BM 303	Air Slide	AC-308	pre-3/24/98	X			
	Air Slide	AC-309	pre-3/24/98	X			
				Applicability			
Process	Equipment Type	Equipment ID Number	Date of Mfg.				

				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Finish Mill	Air Slide	AC-312	pre-3/24/98	X			
No. BM 303	Air Slide	AC-315	pre-3/24/98	X			
	Air Slide	AC-318	pre-3/24/98	X			
	Air Slide	AC-323	pre-3/24/98	X			
	Air Slide	AC-327	pre-3/24/98	X			
	Air Slide	AC-330	pre-3/24/98	X			
	Air Slide	AC-331	pre-3/24/98	X			
	Belt Conveyor	BC-305	pre-3/24/98	X			
	Ball Mill	BM-303	pre-3/24/98	X			
	Cyclone	CY-303	pre-3/24/98	X			
	Bucket Elevator	E-303	pre-3/24/98	X			
	Screw Conveyor	SC-305	pre-3/24/98	X			
	Screw Conveyor	SC-309	pre-3/24/98	X			
	Screw Conveyor	SC-306	pre-3/24/98	X			
	Separator	SE-305	pre-3/24/98	X			
	Separator	SE-306	pre-3/24/98	X			
	Weigh Feeder	W-305	pre-3/24/98	X			
Finish Mill	Air Slide	AC-340	pre-3/24/98	X			
No. BM 304	Air Slide	AC-341	pre-3/24/98	X			
	Air Slide	AC-342	pre-3/24/98	X			
	Air Slide	AC-343	pre-3/24/98	X			
	Air Slide	AC-344	pre-3/24/98	X			
	Air Slide	AC-346	pre-3/24/98	X			
	Air Slide	AC-347	pre-3/24/98	X			
	Fly Ash Bin	B-342	pre-3/24/98	X			
	Hydrated Lime Bin	B-343	pre-3/24/98	X			
				Applicability			

Process **Equipment Type** **Equipment ID Number** **Date of Mfg.**

				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Finish Mill	Belt Conveyor	BC-341	pre-3/24/98	X			
No. BM 304	Belt Conveyor	BC-342	pre-3/24/98	X			
	Belt Conveyor	BC-343	pre-3/24/98	X			
	Ball Mill	BM-304	1974	X			
	Bucket Elevator	E-340	1974	X			
	FK Pump	PN-340	pre-3/24/98	X			
	Screw Conveyor	SC-320	pre-3/24/98	X			
	Screw Conveyor	SC-340	pre-3/24/98	X			
	Screw Conveyor	SC-341	pre-3/24/98	X			
	Screw Conveyor	SC-342	pre-3/24/98	X			
	Separator	SE-307	1974	X			
	Weigh Belt Conveyor	W-340	pre-3/24/98	X			
	Weigh Belt Conveyor	W-341	pre-3/24/98	X			
	Weigh Belt Conveyor	W-342	pre-3/24/98	X			
	Hopper w/ Scale	WS-340	pre-3/24/98	X			
	Hopper w/ Scale	WS-341	pre-3/24/98	X			
Clinker	FK Pump	PN-350	pre-3/24/98	X			
Grinding	FK Pump	PN-351	pre-3/24/98	X			
OK Mill	Air Slide	AC-350	2001/2002	X			
	Air Slide	AC-351	2001/2002	X			
	Air Slide	AC-352	2001/2002	X			
	Air Slide	AC-353	2001/2002	X			
	Air Slide	AC-354	2001/2002	X			
	Belt Conveyor	BC-351	2001/2002	X			
	Bucket Elevator	E-350	2001/2002	X			
	Chain Conveyor	DCH-350	2001/2002	X			
	Chain Conveyor	DCH-351	2001/2002	X			
	OK Mill	RM-305	2001/2002	X			
	Separator	SE-308	2001/2002	X			

Process	Equipment Type	Equipment ID Number	Date of Mfg.	Applicability			
				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Sacking	Bag Packer	BP-501	pre-3/24/98	X			
	Bucket Elevator	BE-501	pre-3/24/98	X			
	Bag Packer	BP-502	pre-3/24/98	X			
	Bucket Elevator	BE-502	pre-3/24/98	X			
	Palletizer	PT-501	pre-3/24/98	X			
	Palletizer	PT-502	pre-3/24/98	X			
Bulk Loading	East Side Scale Loadout	AC-507	pre-3/24/98	X			
	West Side Scale Loadout	AC-509	pre-3/24/98	X			
	Silo 15 Loadout	LSP	pre-3/24/98	X			
	Silo 16 Loadout	LSP	pre-3/24/98	X			
Cement Storage	Silo 15	S-15	pre-3/24/98	X			
	Silo 16	S-16	pre-3/24/98	X			
	South Finish Silo 1	S-1	pre-3/24/98	X			
	South Finish Silo 2	S-2	pre-3/24/98	X			
	South Finish Silo 6	S-6	pre-3/24/98	X			
	South Finish Silo 7	S-7	pre-3/24/98	X			
	South Finish Silo 11	S-11	pre-3/24/98	X			
	South Finish Silo 12	S-12	pre-3/24/98	X			
	Cement Silo 3	S-3	pre-3/24/98	X			
	Cement Silo 4	S-4	pre-3/24/98	X			
	Cement Silo 5	S-5	pre-3/24/98	X			
	Cement Silo 8	S-8	pre-3/24/98	X			
	Cement Silo 9	S-9	pre-3/24/98	X			
	Cement Silo 10	S-10	pre-3/24/98	X			
	Cement Silo 13	S-13	pre-3/24/98	X			
	Cement Silo 14	S-14	pre-3/24/98	X			

Process	Equipment Type	Equipment ID Number	Date of Mfg.	Applicability			
				40 CFR 63 Subpart LLL	40 CFR 60 Subpart Y	40 CFR 60 Subpart OOO	40 CFR 64 CAM Rule
Cooling Towers	Cooling Tower 1	CT-1	pre-3/24/98				
	Cooling Tower 2	CT-2	2001/2002				
	Cooling Tower 3	CT-3	2001/2002				

* These requirements are effective as of June 10, 2002.

** This equipment will be permanently shut down with the existing kiln system no later than 180 days after the commencement of operation of the new kiln system.

**ATTACHMENT “D”:
DUST COLLECTOR LIST**

Air Quality Control Permit No. 1001785

for

Phoenix Cement Company

Equipment No.	Manufacturing Name	Model No.	Application Equipment	Year
DC-304	Norblo	380-A	B-301, BC-301, PN-301, PN-341	1958
DC-366	Fuller	144C10	BC-360, BC-361, BC-363, E-360	2002
DC-367	Fuller	36TA10	AC-362, AC-363, AC-364	2002
DC-368	Fuller	36TA10	AC-364, AC-606	2002
DC-305	Norblo	380-A	B-302, SF-303, SE-304	1958
DC-409	Fuller	225C10	AM-407	2002
DE-410	Fuller	64C10	AC-408, AC-409, AC-414, AC-415, B-407	2002
DC-603	Fuller	36DS10	PN-601 FK Pump venting	1995
DC-604A	Whealabrator	2JPSC4	PN-602 FK Pump venting	1998
DC-411	Fuller	36TA10	AC-360, AC-361, AC-413	2002
DC-431	Fuller	10M320C16(6)	PN-402 FK Pump venting	2002
DC-446	Fuller	48TA10	DBC-404 Pan Conveyor	2002
DC-447	Fuller	121C10	B-404, BC-402, DBC-404, E-404, VF-404	2002
DC-448	Fuller	48TA10	BC-402, BC-403	2002
DC-316	Fuller	48TA10	BC-309, BC-310	2002
DC-312	Fuller	100C10	B-350, B-351, BC-310, BC-312	2002
DC-306	Norblo	380-A	B-303, BC-313	1958
DC-352	Fuller	169C10	BC-350, BC-351, E-350	2002
DC-350	Fuller	2M1650S12(6)	AC-352, AC-353, PN-350, PN-351	2002
DC-510	Fuller	196C10	Cement Silos 3, 4, 5, 8, 9, 10, 13, 14	2002
DC-450	Fuller	64CX10	BC-451, BC-462	2002

Equipment No.	Manufacturing Name	Model No.	Application Equipment	Year
DC-451	Fuller	81CX10	W-450, W-451, BC-454	2002
DC-452	Fuller	100CX10	B-450, BC-451, BC-453	2002
DC-445	Fuller	2M735S12(6)	Clinker Cooler	2002
DC-453	Fuller	540SX12(6)	Coal Mill, SE-450, SC-453, SC-454, SC-455, RM-450	2002
DC-454	Pfister	AJM044	B-452	2002
DC-455	Pfister	AJM044	B-453	2002
DC-212	Sly	STJ-46-10	BC-403, E-200	2000
DC-213	Sly	STJ-68-10	DO-200, BC-216	2000
DC-214	Sly	STJ-68-10	DO-201, BC-217	2000
DC-100	Dusty Dustless	TBD**	B-201	1986
DC-200	DCE, Inc.	DLMV30/15/F6	BC-214	1988
DC-202	Ultra Industries	SQ-100-8	RM-201	1984
DC-301	Fabric Filter NW	890-10	BM-301, SE-300, CY-300, CY-301, E-301	1984
DC-302	Norblo	864-A	BM-302, SE-303, SE-304	1958
DC-303	Norblo	864-A	BM-303, SE-305, SE-306	1958
DC-308	Cycloneaire	BF9-5	B-343	1983
DC-309	Flex-Kleen	B4-RA-48	B-342	1983
DC-340	MikroPul	80-F-4	SE-307	1972
DC-341	MikroPul	80-F-2	BM-304	1972
DC-342	MikroPul	64S-8-20	B-340	1972
DC-343	MikroPul	72-H-449	PN-340	1972
DC-344	Wolverine	TBD**	BC-341	1983
DC-460	MikroPul	IF1	B-460, BC-463, CR-460	1974
DC-501	Pangborn	65 Type CH-3	BP-501, BE-501	1958
DC-505	Pangborn	65 Type CH-3	BP-502, BE-502	1958
DC-503	MikroPul	64S-8-20	East Side Scale Load Out	1980
DC-504	Pangborn	62 Type CH-3	West Side Scale Load Out	1958
DC-506	Appco	60-700D	Silo 15, Silo 16	1976

Equipment No.	Manufacturing Name	Model No.	Application Equipment	Year
DC-507	MikroPul	16-S-8-30	Silo 15, Silo 16 Load Out	1976
DC-508	Ecolaire	500-2	South Finish Silos 1, 2, 6, 7, 11, 12	1983
DC-601	MikroPul	I-F-1	Silo 601, Silo 602	1972
DC-602	MikroPul	1215-10-20C	Silo 605	1972
DC-605	Fuller	36DS10	AC-600	1995
DC-606	Whealabrator	12WWC-36	AC-600, AC-601	1995
DC-511	TBD**	TBD**	PT-501	2002
DC-512	TBD**	TBD**	PT-502	2002
DC-215	TBD**	TBD**	BC-206	2002
DC-216	TBD**	TBD**	BC-213	2002
DC-204*	NA***	NA***	Clinker Sample Station	1958
DC-205*	NA***	NA***	CR-201, BC-213	1958
DC-206*	NA***	NA***	Clinker Stacker	1988
DC-206N*	NA***	NA***	Clinker Stacker North Boom	1988
DC-206S*	NA***	NA***	Clinker Stacker South Boom	1988
DC-207A*	NA***	NA***	Clinker Reclaimer - North	1988
DC-207B*	NA***	NA***	Clinker Reclaimer - South	1988
DC-207N*	NA***	NA***	Clinker Reclaimer - North	1988
DC-207S*	NA***	NA***	Clinker Reclaimer - South	1988
DC-208A*	NA***	NA***	Clinker Unelevator	1988
DC-209A*	NA***	NA***	BC-209, BC-210	1988
DC-209B*	NA***	NA***	BC-209, BC-210	1988
DC-210*	NA***	NA***	BC-210, BC-212	1988
DC-211*	NA***	NA***	BC-211, BC-212	1988
DC-401*	NA***	NA***	Kiln Feed Alleviator	1990
DC-402*	NA***	NA***	Clinker Drag Chain	1988
DC-403*	NA***	NA***	BC-208	1988
DC-404*	NA***	NA***	#1 Kiln	1958

Equipment No.	Manufacturing Name	Model No.	Application Equipment	Year
DC-405*	NA***	NA***	#2 Kiln	1958
DC-406*	NA***	NA***	Kiln Feed Overflow	1990
DC-407*	NA***	NA***	#3 Kiln	1958
DC-408*	NA***	NA***	AC-403B	1990
DC-473*	NA***	NA***	#1 Clinker Cooler	1971
DC-478*	NA***	NA***	#2 Clinker Cooler	1971
DC-483*	NA***	NA***	#3 Clinker Cooler	1971
DC-540*	NA***	NA***	Silo 13	1972

- * This equipment will be permanently shut down with the existing kiln system no later than 180 days after the commencement of operation of the new kiln system.
- ** TBD = To Be Determined
- *** NA = Not Available